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ORIGINAL ARTICLES.

NOTES ON SOME CONGENITAL ANOMALIES CONNECTED WITH THE BRANCHIAL APPARATUS.[1]

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I. CONGENITAL INCOMPLETE EXTERNAL FISTULA OF THE NECK, IN THE LINE OF THE FOURTH PHARYNGEAL CLEFT.

ON May 31, 1892, a female infant, two weeks old, was brought to my office, upon the recommendation of the midwife who had delivered the mother, for the purpose of explaining the nature of a peculiar mark on the neck that had been noticed immediately after the birth of the infant. This "mark," when first seen, presented the appearance of a little dot, in the center of which could be detected a minute orifice. On the second day after birth the midwife noticed that a little albuminous fluid oozed from the orifice. There was no redness or evidence of inflammation about this little opening. When I examined the child I found a distinct fistulous orifice at a point about one quarter of an inch above the right sterno-clavicular articulation and on a line with the anterior margin of the sterno-mastoid muscle. The neighborhood of the fistula appeared soft, pliable, and free from inflammatory hardness; nevertheless, by pressing and pinching up the skin around the fistula, a considerable amount, about ten or twenty drops, of a thick, ropy puruloid fluid, was made to exude from the opening. By insinuating a slender probe into the orifice, a tract leading to a sinus nearly two inches in depth was readily discovered. The tract was obliquely directed upward and inward, under the sterno-mastoid muscle, and toward the pharynx, when further progress appeared to be arrested by a *cul de sac*. There was some sensitiveness, possibly pain, aroused by the exploration, as the child would cry when the probe was introduced, though no manifestations of great distress or of a reflex character were elicited. The injection of milk with a small syringe was attempted, but this only distended the tract, and was immediately returned after the withdrawal of the syringe. The orifice of the fistula was carefully watched while the child suckled, and as no milk was seen to escape through it, I concluded that it did not communicate with the pharynx.

The fistula was the only visible or recognizable abnormality presented by this infant; in fact, it was an unusually healthy, robust, and well-formed baby. The parents of the child are both Americans, of English-Irish extraction; the father is a mechanic, aged thirty-four years; the mother is thirty years of age. Both are in excellent health, and know nothing of any condition similar to this in their respective families. The mother has given birth to other healthy children, and cannot account for her baby's condition by any hereditary influence.

From the congenital existence of the fistula, its situation just above the right sterno-clavicular articulation, and along the line of the sterno-mastoid muscle, it was plain that this fistula was a relic of embryonal life, and, to be more specific, a teratoid evidence of imperfect closure of the fourth branchial cleft, or, probably, better, of the *precervical sinus*. (His.)

While congenital fistulæ in this situation are not altogether rare, they nevertheless possess a peculiar attraction to the thoughtful physician because their pathogeny is so intimately connected with the earliest developmental facts of embryonal existence, and their presence recalls a period in human ontogeny which is of critical importance, and when any disturbance or accidental interference with the normal evolution of the embryo is likely to be followed by the most disastrous consequences. This consideration alone encourages me to believe that a few remarks on this and other illustrations of teratoid anomaly will be of sufficient interest to justify their presentation.

Though we are told by G. Fisher[1] that as early as 1789 Hunkowski published two observations on congenital fistula of the neck, it is nevertheless true that a knowledge of the true nature of the condition has not been vulgarized in the profession until the last fifteen years. And yet the correct interpretation of some of the types of this condition is still a matter of discussion among the ablest teratologists. It is admitted by all writers that Dzondi,[2] in 1829, first seriously attracted the attention of the profession to the subject, describing it as "congenital tracheal fistulæ." This designation proves clearly that Dzondi had fallen into a serious error in regard to the true nature of these congenital tracts, but Ascherson[3] (1832) soon demonstrated that they had nothing to do with the larynx, but rather, when the fistulæ were complete, that they implicated the pharynx. The latter author attempted to explain their mode of formation by the embryologic data furnished by the investigations of Rathke, Husche, Von Baer, and Burdach, on the branchial arches.

Following closely upon Ascherson's original paper other observations and contributions appeared in Germany, from Luschka, Roser and Heusinger,

[1] Communicated, with presentation of patients and specimens, to the Orleans Parish Medical Society.

[1] "Historische Notiz zur Angeborenen Halsfistel, Deutsche Zeitschrift für Chirurgie, 1873, Bd. ii, p. 150; also in "Die Krankheiten des Halses," Deutsche Chirurgie von Billroth und Lücke, Stuttgart, 1880, B. xxxiv.

[2] Dzondi: "De Fistulis Tracheæ Congenitis" (Halæ, 1829), quoted by Fisher, loc. cit.

[3] Ascherson: "De Fistulis Colli Congenitis," Berlin, 1832.

and in France, from P. Broca, Faucon, S. Duplay, Sarrazin and Cusset. So much work had been done in this direction that Heusinger, in 1864, had collected 46 cases; Cusset, in 1877, over 70; Fisher, in 1880, had gathered 100; and finally, in 1890, Konstanecki and Mielecki were able to base their most recent and complete study upon a total of 125 observations.[1] This last memoir is based upon the most recent embryologic researches of His, Kölliker, Fol, Rabl, etc., on the normal development of the neck. Though still more recent, and equally important from the critical standpoint, are the chapters in the unfinished *Traité des Affections Congenitales*, by Professor Lannelongue, vol. i, 1891, and the erudite article by A. Broca, in the *Traité de Chirurgie* (Duplay-Reclus), vol. v, 1891, to both of which I am greatly indebted for my references.

We know but very little of the causes that lead to congenital fistulæ of the neck. The most salient point in the etiology thus far obtained lies in the frequency of heredity as an etiologic factor. Fischer was able to associate hereditary influence in 21 cases among 232 observations. Hereditary influence may manifest itself through several generations, as shown in Ascherson's observations, in which eight individuals of the same family were affected with branchial fistulæ in the course of three generations.

Though this condition is the result of a developmental vice of the branchial apparatus or of the precervical sinus (in cases of infra-hyoid fistulæ), it is a notable fact that it is rarely associated with other malformations, though concomitant deformity of the external ear has been noted by Heusinger, and of the middle or internal ear, by Virchow. While sex does not appear to exercise any determining influence, it is nevertheless true that in the latest statistics of Konstanecki and Mielecki, a certain predominance of the male sex is noticeable.

Branchial fistulæ may appear in three different ways. (1) They may be complete, connecting the external integument with the pharyngeal cavity; (2) they may appear as blind external sinuses opening upon the cutaneous surface; and (3) they may be blind internal sinuses, diverticula or *cul de sacs* opening only into the pharynx. This last form, according to Lannelongue, is of doubtful existence. The incomplete external fistula is by far the most frequent. Thus of 75 fistulæ, 52 were of this class, 18 were complete, and 5 were internal. The seat of the external or cutaneous orifice is variable, but it is far more common along the anterior border of the sterno-mastoid and in the infra-hyoid region than elsewhere.

[1] K. Konstanecki und A. Mielecki: "Die Angebornen Kiemen Fisteln des Menschen," Arch. für path. Anat. und Physiologie, 1890, Bd. cxx, p. 385, etc.

Topographically, congenital fistulæ may be classified as follows (Lannelongue):

1. Fistulæ opening into the concha of the ear.
2. Fistulæ opening into the supra-hyoid region, which is common to the four branchial clefts.
3. Fistulæ opening in the infra-hyoid region, *a*, median; *b*, lateral.

The internal opening of the complete fistulæ is almost invariably recognized in the tonsillar region and at the base of the tongue. This internal orifice is usually very small, easily escapes the eye, and can only be demonstrated by injecting the external orifice with milk or some coloring-substance. But Heusinger reports a case in which the orifice was large enough to admit the little finger, and in another instance reported by Mayr it was associated with diverticula or pockets in which food accumulated.

In the case herein reported, exploration has been attempted by the probe, and injection of the external orifice, with the result of demonstrating the incompleteness of the fistula.

In some cases the escape of the ingesta furnishes excellent proof of their completeness. Thus a patient of Heusinger's would frequently notice fragments of bread with water or other fluids escaping through the cutaneous orifice, while at meals; in other cases, such as those related by Santi and Meinet, "a few drops of milk would escape out of the external orifice while the child nursed."

As a rule, the external orifice of the fistula is the seat of a serous or mucoid exudation which resembles saliva (on this account is mistaken sometimes for a salivary fistula), and the resemblance being more pronounced in some cases because this secretion appears to be increased during mastication.

In the majority of cases these fistulæ cause but little inconvenience beyond the discharge of the characteristic secretion. Sometimes the external orifice becomes red, sore, and inflamed, and especially so with some women during the menstrual period. (Maury's case.)

Dysphagia and other disagreeable symptoms have been noticed in many cases but, as a rule, congenital fistula is a very bearable complaint, rarely, if ever, giving rise to dangerous symptoms.

The pathogeny of these fistulæ is probably their most interesting feature. In considering their mode of formation we must revert to the primitive branchial state. We should remember that the first branchial arch originates at the base of the skull in the sphenoidal region and forms the maxillæ. The second branchial arch, known also as the stylo-hyoid arch, serves as the groundwork for the hyoid apparatus, constituted above by the styloid process, which is attached to the temporal, lower down to the stylo-hyoid ligament and terminates

below in the lesser cornua of the hyoid bone. The third branchial arch issues from the temporal region of the skull, and terminates below in the great cornua of the hyoid. Finally, the fourth arch, which is situated behind the preceding, begins above, just behind the third arch, and descends into the neck to form the soft parts of the anterior cervical region, including the larynx and trachea.

"The first branchial cleft,[1] which lies between the first, or maxillary, and the stylo-hyoid arch, does not disappear completely in extra-uterine life. A portion of the auditory canal, formed by the Eustachian tube, the tympanic cavity, and the external auditory canal, remain as permanent vestiges of its existence. The second and third clefts lie very closely together throughout their whole length. For this reason it is difficult to say to which of the first three clefts the fistula belongs. The fourth cleft follows a direction which is clearly indicated by the anterior margin of the sterno-mastoid muscle. The upper half of this furrow lies very near to the third cleft, but its lower half is quite separate and distinct from the upper level of the thyroid cartilage to the manubrium sterni. The fistulæ, therefore, which open along the lower half of the anterior border of the sterno-mastoid are attributable to defective closure of the fourth branchial *cleft.*

This explanation of the origin of these fistulous tracts, especially those of the auricular and lateral supra-hyoid region, has been admitted with practical unanimity as a classical teaching until very recent years; and in fact, an observer so competent and authoritative as Lannelongue (*Maladies Congenitales*, 1891) still regards this theory as the one that best explains their presence, though he admits as plausible the more recent explanation given by His and Rabl. According to these observers and their followers, these embryonal vestiges should be accounted for by an imperfect closure of the *sinus præcervicalis* (His) or the cervical canal of Rabl—a deep anfractuous furrow that is found at the base of the neck, at the end of the branchial period. It is formed by the junction of the ectodermic surface of the branchial arches with the thoracic integuments—the thymus gland appearing at its deep and lower extremity. Any anomaly in the development of this sinus, or even of the thymus itself, would readily explain the persistence of these congenital fistulæ or cysts in this region of the neck. Lannelongue insists, however, that this theory would account for the lower incomplete or blind fistulæ, but that the complete fistula is explicable only by an imperfect closure of a branchial cleft.

There is a great deal to be said in favor and against both the older and the more recent views, especially when we consider the almost constant position of the internal orifice in complete fistulæ, notwithstanding the most variable position of the external opening, but we cannot stop to discuss the embryologic aspect of the question in all its details, and we must proceed with other considerations.

[1] Or, better, pouch, as the later researches of His, Born, Kölliker, Piersol, and others, have demonstrated that no open clefts really exist between the branchial arches.

II. CHONDROMATOUS FORMATION ASSOCIATED WITH INCOMPLETE CONGENITAL CERVICAL FISTULA OF THE THIRD OR FOURTH CLEFT.

One of the most interesting features of these branchial fistulæ is that which refers to the presence of solid cartilaginous or osseous masses that are found attached to the walls of these tracts or along the line of the branchial arches.

In a case reported by Heusinger, he observed a lamella of bone fully three centimeters in breadth at its base, and twenty-eight millimeters in length. Heusinger, Duplay, and Manz have recognized similar osteo-cartilaginous masses in the region of the branchial arches in persons who had no fistulæ.

It was by rare chance that I met with a case that evidently owed its peculiarities to the same pathology.

The patient, a male, laborer, German, aged twenty-four years, was admitted into my service in ward 8, out-clinic, Charity Hospital (in the summer of 1891), for the removal of an inflamed dermoid of the right supra-orbital region. While examining the man I noticed a small chondroid mass situated near the right sterno-mastoid at its anterior margin, about three inches below the mastoid, nearly opposite the thyroid cartilage. The mass had an elongated fusiform shape, and measured about one inch and a half in length. It was very hard and painless; while apparently movable it had ill-defined but deep attachments; it was situated below the deep fascia, and was partially adherent to the sheath of the muscle. About one quarter of an inch below the lower extremity of the mass there was a small depression that contained a very minute opening, so fine that only the bristle of a hypodermatic needle could be insinuated into it for a very short distance. The patient said that he had always had this lump, even from earliest childhood, but as it had never bothered him he had allowed it to remain without disturbance. He also stated that the little opening would occasionally discharge a whitish-looking fluid, but this occurred so rarely that he did not pay any attention to it. He knew but very little of his family history excepting that his parents were healthy and living in Germany. One brother was living, but he was not aware of any abnormality in his case. I suggested the removal of the chondroma and fistula, but he insisted that the removal of the dermoid was enough and that he would come later for the treatment of the cervical growth. But he failed to do so, or at least he did not return again during my term of service.

In this case I believe the diagnosis was congenital chondroma, with associated fistula, of branchial origin, which I would easily have overlooked had it not been that the presence of the dermoid made me think of congenital abnormalities.

Now, what interpretation must be given to these congenital hard growths? Should they be regarded

as rudimentary branchial arches or visceral ribs, following Heusinger's expression, which are developed here in consequence of a defective evolution of the branchial arches?

A rational answer can only be obtained from the data of comparative anatomy and embryology.

Lannelongue, who is deeply learned in these matters, says:

"We know that in the vertebrata that breathe through a permanent branchial system (gills), each permanent branchial arch is provided with a cartilaginous framework which is modeled very much like the ribs of the same vertebrate. Each and all of the vertebræ of fishes, from the caudal extremity to the head, give attachment to ribs. In this class there is no distinct neck. The branchial ribs are continuous above with the cranial ribs and below with the thoracic set. On the other hand, the mammifera are free from cervical ribs, or rather the cervical ribs are reduced to the condition of mere osseous appendages without any definite function, and are united to the bodies of the vertebræ.

"The branchial arches, which are distinct in the embryonal period, become fused later on, and their skeletal frame persists only in a very rudimentary manner. We do not refer to the skeleton of the first branchial arch, which resolves itself into the maxillæ (they are true cranial ribs). But the completely developed branchial ribs, which persist in fishes, are reduced in man, in the case of the second and third arches, to the suspensory apparatus of the stylo-hyoid ligament and os hyoides.

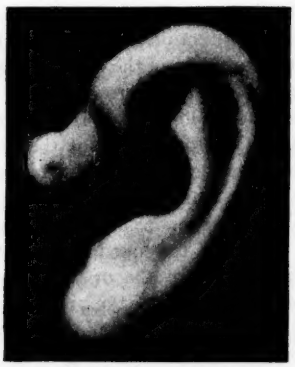
"The fourth branchial arch is entirely deprived of all osseous elements in man, except in the median portion, where the larynx and trachea are formed at its expense. Outside of these respiratory organs, there is no osseous structure to indicate the situation of the fourth branchial pouch in the normal human adult."

Therefore, the skeleton of the branchial arches is very much developed in the facial arch; is rudimentary in the second and third arches, which leave as relics isolated bony and cartilaginous formations, viz., the stylo-hyoid apparatus; and, finally disappear almost *in toto* in the region of the fourth arch. It is true, nevertheless, that the third and fourth branchial arches of the embryo possess rows of cartilages which are analogous to the cartilages of Meckel and Reichert (of the first and second arches). We can readily understand, therefore, that in many instances these primitive cartilaginous formations, instead of becoming atrophied and disappearing, as occurs normally, may, under some disturbing developmental factor remain and develop into the peculiar chondroid and osseous formations that have been herein described.

III. CASES OF CONGENITAL PRE-AURICULAR CHONDRO-FIBROMATA OR AURICULAR APPENDICES.

Apropos of the cartilaginous formations along the lines of the branchial arches and pouches previously described, I have the opportunity of exhibing to the Society a typical specimen of the more common variety of *pre-auricular symmetric* fibro-chondroma, which I removed three weeks ago from the pre-auricular region of a young Jewish gentleman (aged twenty-two years), who thought it a simple "wart," and wanted it removed for purely esthetic reasons. The accompanying photograph gives a pretty clear idea of the appearance of the tumor before its removal. My client had originally two such growths at birth, one in front of each ear (both auricles being perfectly proportioned and well formed), but one was snipped off by a physician some years ago, who also called the growth "a wart," and did not appear to pay much attention to it. These curious growths may be classed with the group of embryonal malformations which are directly traceable to a vicious or teratoid development of the branchial apparatus. The appearance

FIG. 1.



A typical congenital pre-auricular fibro-chondroma, or so-called supernumerary auricle; symmetrical. (Author's case.)

of these little tumors is very characteristic, and when once seen they are not easily forgotten or mistaken for anything like a wart. They appear usually as smooth, slender, elongated, and conoid or club-shaped masses, which usually project rigidly from the skin and measure about three-fourths of an inch in length in adults. They are usually thicker at the free end than at the attached portion, which is narrow and constricted. By palpation a distinct rod of cartilage can be felt imbedded in the mass, and by further exploration it is found connected with the cartilage of the ear. This cartilaginous rod is not always present, especially when the tumor is found in the region of the fronto-nasal plate. These growths are always covered with a skin of perfectly normal appearance.

The congenital appendices here referred to are usually situated, as in the case reported, in the pre-auricular region, near the tragus, with which they are usually connected by a cartilaginous plate; then, much less frequently they are found in the line leading from the tragus to the commissure of the mouth, and more rarely still they are found along

the whole of the median line of the face on the bridge of the nose; again, they have been found springing from the mucous membrane of the lower lip (see Fig. 3) and also in the neck on the anterior sterno-mastoid line along the region of the fourth branchial cleft.

Congenital fibro-chondromata may be single or multiple. There may be one, two or three growths at one of the usual points of election. Generally they are single in the middle external surface of the cheek or on the anterior sterno-mastoid line. They are frequently multiple in the pre-auricular region. In addition they have a tendency to appear symmetrically on the two sides of the face or neck.

This multiple symmetric tendency was well shown in the case of a little boy, aged two years, whom I chanced

FIG. 2.

Three congenital fibro-chondromatous appendices in the pre-auricular region associated with another pedunculated fibro-chondroma of the cheek, in the line of the intermaxillary clefts. Author's case. Sketch after LANNELONGUE, Obstet., lxxvii; Maladies Congenitales, vol. i, p. 563.)

to see in the streets while paying a visit to a patient in the neighborhood. The child presented an entirely normal appearance, with the exception of the presence of three little tumors on each side of the face in the pre-auricular region; there was also another growth on the cheek which was less rigid and more pedunculated than the others. The parents were very poor, and did not appear to be troubled by the condition of the child in the least. I noticed that the mother had several small fibro-lipomatous masses about the face; two on the bridge of the nose and one on a level with the external canthus of the left eye, all of which were apparently congenital. I made a memorandum of the case, intending to return soon to have photographs of both the mother and the child, but the people had moved out of the neighborhood, and I have never heard from them since. The child's appearance was so strikingly like that represented by Lannelongue on page 563 of his *Maladies Congenitales*, vol. i, that I have reproduced that figure with slight modifications, as it will give an exact idea of the situation of the growths in my case.

FIG. 3.

Congenital fibro-chondromata, projecting from lower lip into the mouth. (After LANNELONGUE.)

In my case there was no associated congenital coloboma nor a kerato-conjunctival dermoid, as in Lannelongue's little patient, but the three pre-auricular appendices and the growth on the cheek, on a line with the inter-maxillary cleft, were almost identical.

The exact pathogenesis of these growths is still obscure. They have been studied by Sue, Reismann, Rynd, Morgan, Southam, Van Duyse, but particularly by Lannelongue,[1] by Poirier, and Retterer (*Bull. Société Anatomique*, 1880, *Journal de l'Anatomie*, 1890–91; by J. Bland Sutton ("On

FIG. 4.

Section of a congenital fibro-chondroma of the neck. a. a. Cartilaginous, club-shaped rod at center of tumor. [The pre-auricular varieties are connected with an irregularly-shaped flat plate of cartilage, which serves as a basis or pedestal for the cartilaginous rod.] (Modified after LANNELONGUE, Affections Congenitales, vol. i, p. 544.)

Branchial Fistulæ, Cysts, Diverticula, and Supernumerary Auricles," *Journal of Anatomy and Physiology*, 1887, vol. xxi, p. 289); also by A. Broca (*Bull. de la Société Anat.*, 1889, and an article in Duplay et Reclus, *Traité de Chirurgie*, 1891, vol. v.)

In view of the varieties that have been described

[1] Lannelongue et Achard, Traité des Kystes congenitaux, Paris, 1886. Lannelongue et Menard, Maladies congenitales, vol. i, 1891.

it is possible that all are not ascribable to the same pathogeny, though the bulk of evidence is emphatically in favor of their purely branchial origin.

Bland Sutton, for instance, has with characteristic ingenuity and ability availed himself of the researches of His on the development of the pinna to explain the existence of the pre-auricular variety of these "supernumerary auricles" (as he calls them, with other English writers), on the theory of an aberrant or independent development of a primary auricular tubercle, which has been detached from or has failed to fuse with the general mass of the pinna.

"When supernumerary auricles appear in the neck they are to be regarded as outgrowths from the margins of the branchials, repeating the conditions normally existing in the two anterior arches instead of being suppressed." The same author in his delightful lectures on "Evolution in Pathology," (*Lancet*, February 18, 1888) confirms the original observation of Heusinger who had noticed that the pendulous "tags" which are frequently observed in the necks of goats and other animals are analogous to the "supernumerary auricles" found in man, and interestingly shows also that the existence of these appendages had not escaped the attention of the ancient sculptors, who in some of their statues of fawns and satyrs reproduced not only the "tags" of the lower animals, but also the fibro-chondromatous appendices of the neck, as they are seen in man.

Sutton's theory, plausible as it may appear, is not altogether satisfactory, for it does not account for those cases in which these appendices appear in their most typical form in the pre-auricular region of individuals with *perfectly formed ears*. If these were always due to a defective development of the pinna we could understand that the growth has been formed by a detached tubercle, but this not being the case we must seek for another explanation.

At one time Lannelongue, Trelat, and Magitot had thought that the pre-auricular varieties could be accounted for by a vicious budding of Meckel's tubercle, but this opinion has been abandoned by Lannelongue, who, after a careful analysis of all the evidence, now holds "that these congenital fibro-chondromatous appendices of the neck, as well as of the face, originate in an abnormal budding of the branchial arches on a level with the clefts which separate them at a certain period of embryonal life."

The arguments in favor of this view are forcibly presented by this distinguished observer, but I could not appropriately present them here. I will, therefore, forego their discussion. I shall only briefly repeat what has been noted by others, that congenital fibro-chondromata are frequently associated with other teratoid manifestations, viz., macrostoma, auricular malformations, atrophy of the inferior maxillary, which have been observed by Rynd, Morgan, Van Duyse, Trelat, and others. (Broca.) Lannelongue has been particularly struck by the influence of heredity in their production. Van Duyse has insisted upon the importance of amniotic adhesion as a causative factor, but judging from my limited experience and the observations of others it would appear that this association is rather an accidental and exceptional circumstance than a constant factor in the pathogeny.

As to the treatment of these types of congenital abnormalities that are here presented, little need be said except that extirpation is the indication whenever it is practicable. An incomplete fistula may be completely removed by dissection, even in very young children, but the traumatism involved in the extirpation of the more complete variety with a pharyngeal aperture is too great to inflict on infants and even young children. This field of surgery is still comparatively unexplored, and to my knowledge there is but one recorded case of successful extirpation of a *complete* branchial fistula. This is the case of E. Tricomi.[1]

The patient in this case was a woman, aged twenty-four years, who had a complete fistula, the external orifice of which was situated in the right anterior sterno-mastoid line, 2½ centimeters above the right sterno-clavicular articulation, 2 centimeters to the right of the median line, and 8 centimeters below the angle of the lower jaw. The external opening of the fistula measured 2 millimeters in diameter and allowed a probe to penetrate a distance of 10 centimeters in depth. A colored liquid was injected through the lower orifice, and it was discharged into the pharynx, behind the right tonsil, through the internal orifice. Deglutition was effected normally, but the act of swallowing was accompanied by a tugging sensation and severe headache. An incision was made which extended from the external opening to the angle of the jaw on a guide furnished by the probe in the fistulous canal. The whole tract was exposed and readily detached from the neighboring parts to which it was but slightly adherent, and the upper part was dissected out with the help of the finger introduced into the pharynx. The pharyngeal opening was then closed by suture. The result was a complete success.[2]

Irritant injections have been carefully tried. Weinlechner (quoted by E. Albert, Vienna) has thoroughly tested iodin, and has convinced himself of its absolute worthlessness.

It should always be remembered that any procedure that would close only the *external* orifice of a complete fistula would simply create a pharyngeal

[1] E. Tricomi: Un caso di fistola congenita completa dell collo (fistola branchiale), La Riforma Medica, p. 541, August 28, 1891.

[2] Other cases of successful extirpation of congenital fistulæ have been reported; for instance, that of G. Cavazzarri (Riforma Medica, Oct. 7, 1891), and the later cases of Schlange (Verhand. der Deutsche Gessellschaft für Chirurgie, xxii, Kongress, 1893); but I am not certain that they were *complete* fistulæ.

diverticulum wherein food-stuffs and secretions would accumulate with disastrous results, so that the extirpation of a complete fistula should not be undertaken unless it is formally contemplated to remove the whole tract.

While the operative treatment of congenital fistulæ may become a very serious matter, it is otherwise with the treatment of the congenital fibro-chondromata which can be easily, quickly, and painlessly removed under cocain-anesthesia. It is well to remember their deep cartilaginous connections, especially in the pre-auricular variety, in order that a proper cosmetic effect may be obtained.

TYPE OF DISEASE AMONG THE FREED PEOPLE (MIXED NEGRO RACES) OF THE UNITED STATES.

Based upon the Consolidated Reports of over 430,466 Cases of Sick and Wounded Free People (mixed African Races), and 22,053 of White Refugees, under Treatment from 1865 to June 30, 1872, by Medical Officers of the Bureau of Refugees, Freedmen, and Abandoned Lands.

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INTRODUCTION.

THE organization of the Medical Department of the Bureau of Refugees, Freedmen, and Abandoned Lands, has presented an admirable opportunity to settle definitely some disputed points concerning the type, character, and specific differences, if such exist, between diseases as found in the African and the Caucasian races in this country.

With the view of endeavoring to furnish to the members of the medical profession some information on the points mentioned, the accompanying consolidated reports have been compiled, and I desire, briefly, to call attention to the facts elicited. It may not be amiss, by way of explanation, to state that the operations of the Medical Department of the Bureau of Refugees, Freedmen, and Abandoned Lands were on a much more extended scale than is generally supposed. During the years 1866–68, there were in operation fifty-six bureau hospitals and forty-eight dispensaries. One hundred and thirty-eight physicians were employed, who visited the sick, not only at the hospitals, but at the camps and settlements, where they had been assembled by the results of the war.

The total number of patients (freed people) under treatment from 1865 to June 30, 1872, was a little over four hundred and thirty thousand (430,466). It should be clearly understood that the Consolidated Report (No. 1), showing the cases of disease that occurred among the freed people embraced all the shades of color among them, from the jet-black skins belonging to the pure African race up to the mulatto and quadroon.

This report and Report No. 2, giving the cases of disease treated among the white refugees who fled into our lines for protection during the war, are exact transcripts of the official records now in possession of the War Department. The total number of these cases was twenty-two thousand and fifty-three (22,053).

NUMBER OF CASES OF DISEASE TREATED, AND MORTALITY.

The total number of colored patients under treatment from the organization of the Medical Department of the Bureau, June 16, 1865, to its discontinuance by law, June 30, 1872, was 430,466. This total is somewhat less than that which would be given by adding together the number of patients under treatment, as given in the annual reports of the chief medical officers of the bureau for the years 1865 to 1872, for the reason that to avoid duplication all cases have been dropped from the summary after having been once reported.

The total number of deaths recorded among the freed people was 18,027, or nearly 4.02 per cent. of the number under treatment.

The total number of white refugees under treatment during the period beginning as already mentioned, and ending June 30, 1869, was 22,053, and the number of deaths was 735, or about 3.33 per cent of the number under treatment.

INTERMITTENT AND REMITTENT FEVERS.

On examining the Consolidated Report (No. 1) of diseases prevailing among the freed people, it will be seen that the most prominent on the list, as regards both the number of cases and the number of deaths caused by them, are the so-called miasmatic diseases.

The number of cases of remittent fever, and of quotidian, tertian, quartan, and congestive intermittent fevers combined, reaches the surprising total of 115,855. The number of deaths from these diseases was 1351, showing a mortality of about 1.16 per cent. of the cases treated.

The ratio of the number of cases of remittent and intermittent fevers to the number of cases of all other diseases treated was 26.91 per cent., or nearly 27 per cent.

I have stated that the large number of cases of remittent and intermittent fevers is surprising, and it certainly is so when we consider the statements so frequently made by medical authors that negroes are not subject to miasmatic diseases.

In order to show that the conclusions drawn from the statistics mentioned are correct, I will only refer to the *Medical and Surgical History of the War of the Rebellion*, issued under the direc-

tion of the Surgeon-General, U. S. A., by Assistant Surgeons J. J. Woodward and G. A. Otis, U. S. A., vol. 1, 1873, table No. III, pages 710–712. This table shows that the total number of colored troops of the United States Volunteer Army under treatment from 1864 to 1866 was 629,354. The total number of cases of remittent and intermittent fevers treated among these troops during this period was 152,141, or 24.17 per cent. of the total number of colored soldiers under treatment.

Whatever may be the fact in Africa, it is very certain that the negro of pure or mixed blood, as naturalized in this country, is not exempt from the operations of the causes that induce remittent and intermittent fevers. This large average ratio, however, is surpassed in some localities, for we find in certain places and in certain years that the average ratio is higher than that given; indeed, as it will be seen by the accompanying table, in the year 1868 the ratio of cases of remittent and intermittent fevers to other diseases in Florida was 45.40 per cent., and in the State of Arkansas, in the same year, 54.43—over one-half the entire number of cases of disease under treatment:

TABLE SHOWING NUMBER OF SICK AND WOUNDED FREED PEOPLE UNDER TREATMENT BY MEDICAL OFFICERS IN THE BUREAU OF R., F. AND A. L., IN THE YEAR 1868.

Districts.	Total number of patients treated.	Total number of cases of malarial diseases treated.	Ratio per 1000 of malarial cases.
District of Columbia	4,590	727	15.84
" Virginia	32,770	7,443	22.71
" North Carolina	7,000	1,595	22.78
" South Carolina	39,827	12,084	30.34
" Georgia	14,618	6,310	43.16
" Alabama	1,004	449	44.72
" Florida	1,339	607	45.40
" Louisiana	6,995	2,843	40.64
" Mississippi	5,113	2,000	39.11
" Arkansas	3,972	2,165	54.43

Another point of interest to be noted is the fact that the number of cases of malarial diseases increases in proportion to the number treated, as we proceed south along the States bordering upon the Atlantic seaboard and Gulf of Mexico, just as in pulmonary tuberculosis the proportion of cases to other diseases increase as we pass alosng the Atlantic seaboard in a northeasterly direction.

The number of cases of malarial diseases increases, as stated, till we reach the Gulf States, and finally reaches its maximum in the States bordering upon the lower parts of the great Mississippi Valley. Our hospitals were also, as a rule, necessarily located near the Atlantic seaboard and bordering upon the Mississippi River, these being the most important points of communication, and where were aggregated the largest number of freed people requiring medical assistance.

The total number of cases of remittent and intermittent fevers occurring among the white refugees (see Table No. 2) was 5905, being 26.78 per cent. of the total number under treatment.

The remarkable similarity of the ratio of the white and colored patients under treatment would seem to convey the inevitable conclusion that there is very little difference, if any, between the susceptibility of the colored people and that of the white people of the Southern States to the attacks of remittent and intermittent fevers.

COMPARATIVE FREQUENCY OF VARIOUS FORMS OF MALARIAL FEVERS.

The most frequent form of malarial fevers met with among the freed people of the Southern States is the quotidian, being 41.30 per cent. of the entire number of cases of intermittent fevers under treatment.

It has been a disputed point among authors as to whether the quotidian or tertian is the most frequent form of intermittent fever. Dr. W. C. Maclean (*Reynolds' System of Medicine*, 1870, vol. 1, p. 595) says: "The tertian is said by many authors to be the primary type of fever, and to be the most common of all. This is certainly not the case in India, where, without doubt, the quotidian is the most common and the quartan the rarest of all intermittents." The remarks of Dr. Maclean with reference to the fevers in India are exactly paralleled by the experience of the physicians of the bureau in the treatment of the cases occurring among the colored people of the South. By referring to the *Medical and Surgical History of the Rebellion*, vol. i, page 710, which shows the statistics of sickness and mortality of the colored troops during the war, it will be found that the quotidian form of intermittent fever was also the most common among them, being 42 per cent. of the number of cases of malarial fever under treatment.

It is somewhat interesting to note that when we examine the statistics of cases of intermittent fever occurring among the white refugees, as seen in Report No. 2, and who lived in similar localities, we find a difference in the type of fever, and among them the tertian is found to be the most frequent, being 38.47 per cent. of the cases under treatment. Excluding quotidian and tertian fevers, the form of malarial fever most frequently met with was remittent fever, being found in the proportion of a little over twenty-three (23) per cent. of the total number of cases, and showing an aggregate of 26,793.

SCROFULA AND PULMONARY TUBERCULOSIS.

The total number of cases of scrofula reported was 6613, with .299 deaths. The total number of

cases of pulmonary tuberculosis was 5373, with 1787 deaths. The total number of cases of scrofula and pulmonary tuberculosis together was only 11,986, or a little less than 3 per cent. of the total number of cases under treatment.

The foregoing figures are quite sufficient to disprove the statements so commonly made concerning the extreme liability of the colored race to scrofula and pulmonary tuberculosis. So far from these two diseases being almost universally prevalent among the colored people in the Southern States, these people seem to be no more subject to them than the whites who live under like conditions in our larger cities. Scrofula and pulmonary tuberculosis are, in great part, caused by a neglect of the laws of hygiene and sanitary science. These diseases do not seem to be any more destructive to the colored race than to the white.

TYPHOID FEVER.

Of this disease we have 3820 cases recorded, with 951 deaths; *i. e.*, nearly twenty-five (25) per cent. of the cases treated died. The high rate of mortality found in this disease among the freed people was mainly the result of intestinal lesions, characteristic of typhoid fever, and also of the so-called typhoid pneumonias, which were frequently developed during the course of the disease. The lesions of the intestine were very marked. Indeed, in the majority of the cases during life there were evidences of, and the post-mortem appearances showed, the congestion and ulceration of Peyer's patches, so pathagnomonic of typhoid fever. The symptoms presented were those that generally characterize this malady, and were usually so well-marked as to leave no doubt as to the nature of the disease, with the single exception of the eruption, which was so irregular in its time and mode of appearance as to be of little utility as a means of diagnosis.

The cerebral symptoms developed early, and the delirium was of a low, muttering character, and accompanied by the dry, parched, or brown tongue, the sordes on the teeth, uncontrollable diarrhea, and the other symptoms of the true typhoid condition.

In many of the cases the vitality seemed very feeble, and the progress of the disease was very rapid, frequently terminating fatally by the tenth or fifteenth day after the attack.

The so-called typhoid pneumonia, or, properly speaking, typhoid consolidation of the lung, was a frequent and apparently dangerous complication of many of these cases. It was usually without any evidences of acute inflammation, and presented the characteristics of passive hyperemia of the lung, with a great tendency to effusion into the various serous cavities. The type of the disease seemed to require the energetic administration of stimulants and nourishment. Quinine was given in large doses early in the disease in some cases, but seemed only to abate the violence of the febrile symptoms, and had no other influence upon the course or duration of the fever.

DIARRHEA AND DYSENTERY.

The number of cases of these diseases met with among the freed people was very large, the aggregate of acute and chronic cases being 39,528, with 2346 deaths; of acute diarrhea there were 24,763 cases, with 727 deaths. Of chronic diarrhea there were 4777 cases, with 861 deaths. Of acute dysentery there were 8371 cases, with 432 deaths. The greater portion of the mortality met with (as is always the case) is among children and youths.

The large number of cases of lesions of the various parts of the intestinal tract which existed is susceptible of ready explanation when we consider the entire ignorance of the laws of hygiene that prevailed among these people, and their use of improper articles of food. The staple articles of diet among the freed people were fresh and salt pork and corn-meal, with a very insufficient supply of milk and vegetables. To the continued use of this diet, along with neglect of personal ablutions, and the tendency to crowd together in ill-ventilated huts, may be fairly ascribed the great prevalence of this class of diseases which existed during the first two years of the bureau—1865, 1866. The sanitary condition of the freed people, however, it should be here remarked, improved very greatly during the latter years of the bureau, and has in still greater degree since that time.

It was a common remark among the physicians on duty that the diseases that prevailed among the freed people during the years 1867–1872 were milder in type and less fatal than those during and immediately subsequent to the late Civil War. I have been especially struck with this fact in the case of syphilis and other enthetic diseases. An unquestionable amelioration in the type of syphilis has taken place during the past ten years, and we no longer see those dreadful cases of phagedenic ulceration so frequently met with in the cases of syphilis that occurred among the freed people during the years 1865, 1866, 1867. The same, to a greater or less degree, may be said of all the diseases prevailing among them, and is, of course, due to better food, more comfortable habitations, and increased cleanliness.

EPIDEMIC CHOLERA.

Of this disease there were 1247 cases reported, with 691 deaths—or a little over half the cases died. The cases of this disease met with among the freed people mostly occurred during the epidemic of 1866

and 1867, and the localities chiefly affected were those States bordering upon the southern parts of the Mississippi Valley and the South Atlantic States.

On the news being received in the spring of 1866 that the epidemic was approaching, instructions were transmitted by the Chief Medical Officer of the Bureau to the surgeons-in-chief of each district to cause a thorough cleansing and disinfection of all the hospitals, camps, and quarters occupied by the freed people. My personal experience of this epidemic was very limited, being confined to the few cases (some twenty in number) which occurred in the District of Columbia during the summer months of 1866. In these cases the state of collapse came on very early, and when developed seemed scarcely amenable to treatment. The stringent sanitary measures that were adopted by the local authorities of Washington and the Medical Department of the Bureau no doubt had a considerable influence in arresting the spread of the epidemic. These measures included compulsory cleansing and whitewashing at short intervals of the quarters and localities inhabited by the freed people, together with the prompt removal and disinfection of all refuse and garbage, and, of course, prompt isolation of the patients. The curious and rather discouraging fact was developed by the statistics of this epidemic that, under every variety of treatment, about one-half of the patients attacked died. This was not only true among the freed people, but was also the case among the white, who suffered in a like proportion.

SMALLPOX.

The total number of cases of variola reported was 10,299. The number of deaths reported was 1802, or 17.55 per cent.

The greater number of cases (as will be seen by reference to the consolidated report) occurred during the years 1865 and 1866, and the spread of the disease was greatly facilitated by the condition of affairs then existing in the Southern States. Owing to the disorganization of society and the impossibility of securing remunerative employment on the plantations, vast numbers of the freed people aggregated along the northern frontiers of the border States and in the commercial cities of the Atlantic seaboard and Mississippi Valley. Owing to their destitute condition, the Government was compelled to issue rations, and provide for their temporary support in large camps and settlements, until employment could be found for them.

While I would scarcely like to assert that smallpox ever originated *de novo* by the overcrowding that necessarily resulted, yet some cases of smallpox occurred which were scarcely susceptible of any other explanation.

It need scarcely be said that vaccination and revaccination of all the freed people exposed to infection were strictly enforced, and, as a matter of course, with the same result which has always attended its proper enforcement, namely, the eradication of the disease. A striking exemplification of this was seen in the epidemic of smallpox that occurred in the City of Washington, D. C., during the winters of 1865 and 1866. Instructions were issued to the physicians on duty in the Bureau to vaccinate and revaccinate all the freed people not fully protected. During these two years about 10,000 persons were vaccinated or revaccinated, with the result of causing the disappearance of the disease, which did not reappear in Washington as an epidemic until the winters of 1871 and 1872.

The cases of smallpox were, many of them, confluent in type and presented the usual complications of the disease.

DELIRIUM TREMENS.

The small number of cases of this disease met with among the freed people being only sixty-five, with one death, presents marked contrast in frequency when compared with the large number of cases met with among the white population of our country. This may be partially explained by the fact that chronic alcoholism is not so frequent among the colored people as among their neighbors of the Caucasian race; still, there does seem to be even among those of the freed people who habitually use intoxicating drinks a marked exemption from this disease. In the Freedmen's Hospital, under my charge, at Washington, D. C., which has had under treatment from 1865 to the present time about 5000 patients, I remember seeing only one or two cases, and these were mild in type.

My own belief is that the true explanation of this exemption is to be sought for in the want of development of the cerebral hemispheres, which so often exists among the negroes. Delirium tremens is preëminently a disease causing disorder of intellection, and hence the continued abuse of alcoholic drinks in the negro race is more likely to produce epileptiform convulsions or mania than delirium tremens.

In conclusion, I wish to state that so far as my own experience goes I have found that the negro race does not withstand the attacks of acute inflammation, such as pneumonia, nor do they recover from long-continued illnesses such as typhoid fever, as well as the white race. On the other hand, the power of repair of the negro race, after receiving injuries, and being subject to surgical operations, is excellent.

With the exceptions mentioned in this report, I have never found any specific differences between

diseases as developed in the Caucasian and negro races in this country, the differences met with being in degree, and not in kind.

SYMPHYSIOTOMY.[1]

BY BARTON COOKE HIRST, M.D.,
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MR. PRESIDENT AND GENTLEMEN: In accepting your flattering invitation to deliver the address on Obstetrics on the occasion of your two hundredth meeting I have chosen for my subject symphysiotomy. The position of this operation in the treatment of labor obstructed by a contracted pelvis is beyond doubt the question of greatest present interest in obstetrics. The glamor of novelty surrounding the successful revival of symphysiotomy may have passed away by this time, but the sober second judgment of the profession is now about to be passed upon it. Thanks to the modern method of collective investigation and observation, a few months have sufficed to show defects and advantages in the operation that it would formerly have taken years to learn, so that we are just now in a position, I think, to assign to symphysiotomy its rightful and lasting place among obstetric operations.

It suits my purpose best to indicate first the weak points of the operation that have been manifested in the two years since it has passed from Italy to many different parts of the world.

Foremost among the objections that could be urged against symphysiotomy stands a mortality much higher than was at first anticipated.

In 212 operations since 1887 there have been 27 maternal deaths, a mortality of 12.73 per cent., while the deaths of the infants during and shortly after birth brings their mortality to a fraction over 28 per cent. In our own country the figures are 30 operations, 4 maternal and 7 infantile deaths, or a mortality respectively of 13.3 per cent. and 23.3 per cent. It must be admitted that many of the deaths were not due to the mode of delivery, but were caused by prolonged labor, by injuries to and infection of the parturient tract. Still some deaths are recorded as the result of hemorrhage from the incision, and others were due to septic infection of the wound.

Another objection that might be advanced against symphysiotomy is the fact that it must be limited to contracted pelves with a conjugate above 6.75 cm. It will be difficult, therefore, for the general physician and even sometimes for the specialist to decide, on the one hand, whether symphysiotomy in a given case is practicable, or on the other hand, whether forceps or version and extraction will not prove successful.

Other considerations against symphysiotomy are the tediousness of the operation, followed as it must often be by some other obstetric procedure; the need of good assistants; the absolute necessity of as thorough asepsis as is demanded in abdominal surgery; the likelihood of serious tears in the anterior vaginal wall involving, perhaps, the urethra and the bladder; the difficulty of keeping the vulva clean during the puerperium, on account of the close apposition of the thighs; and the still greater difficulty of disinfecting the vagina and uterus when necessary.

In contrast with these disadvantages attaching to symphysiotomy, let us glance at the advantages of the operation with which it comes chiefly in competition—Cesarean section. If I may be permitted to judge from the comparatively limited experience of three symphysiotomies and four Cesarean sections, I should regard the latter as decidedly the easier operation. Moreover, by Cesarean section the child is sure to be delivered easily, no matter what the size and shape of the pelvic canal may be, and there is no necessity for that nice calculation in pelvimetry that is usually demanded before a contemplated symphysiotomy, a calculation in which even the best of us may err. Further, the mortality of the infants is not quite so great in deliveries by Cesarean section. Finally, the after-treatment of Cesarean section in a favorable case is much easier for patient, physician, and nurse. It is obvious, therefore, that symphysiotomy can be preferred to Cesarean section on one ground alone—that it is less dangerous to the mother. If statistics demonstrate this, then it is the duty of every intelligent obstetrician to familiarize himself with the indications for symphysiotomy, and possibly with its technique, for this is not an operation to be lightly undertaken by anyone who does not possess skill both in obstetrics and abdominal surgery.

A careful study of the results of symphysiotomy and of Cesarean section will show that the latter is at the very least twice as dangerous to the mother as the former. In Dresden, Vienna, and Glasgow the maternal mortality of Cesarean section (99 operations) in the hands of the best operators has been about 10 per cent. In this country, Dr. Harris tells me, he has collected the reports of 88 recent Cesarean sections, with a maternal mortality of 39.7 per cent. The table which Dr. Harris kindly gave me in response to my inquiry is so very important and interesting that I add it in full:

Cesarean operations in the United States, commencing with October 6, 1882	88
Deaths (maternal)	35
Operations in New York City	21
Women recovered	12
Children saved	17
Operations in Philadelphia	15
Women recovered	10
Children saved	11

		Women recovered.	Children saved.
Operations of 1887	8	5	8
" " 1888	13	5	13
" " 1889	9	6	8
" " 1890	17	13	16
" " 1891	10	7	6
" " 1892	12	9	12
" " 1893	10	6	6
	78	51	61

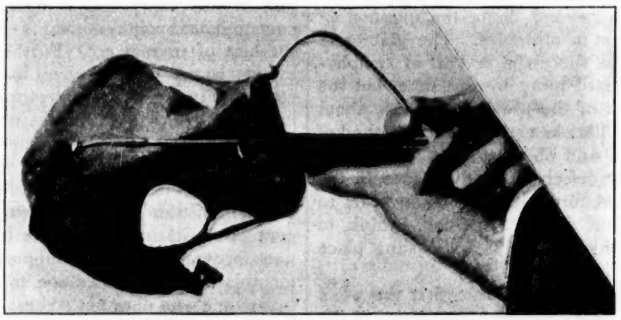
It may be seen by the table that the results of Cesarean section in this country are not improving with time. Since 1887 there have been 78 operations, with 27 deaths—a mortality of 34 per cent. In 1893 there were 10 operations, 4 deaths—a mortality of 40 per cent! The

[1] The address on Obstetrics, delivered by invitation, before the Washington Obstetrical and Gynecological Society, Nov. 17, 1893.

same thing is shown by taking the last 10 cases in New York and Philadelphia. In the last 10 of New York City —women died 5, children lost 1; last 10 of Philadelphia— women died 3, children lost 2—a mortality of 50 and 33 per cent. in the two cities where the best surgical work of the country might be expected.

As is well known, the best work in symphysiotomy has been done in Italy. There the mortality is but 4 per cent. in the last 50 cases. It is true that there is one city in the world where the results of Cesarean section approach those of symphysiotomy. In Leipzig there have been 54 Cesarean operations, with 3 deaths—a mortality of 5½ per cent. But there is no other locality with a record so good as this. Further, if the causes of death after symphysiotomy and after Cesarean section be compared, it will be found that the first has very few deaths attributable to the operation itself. Take, for example, the 4 deaths after symphysiotomy in this country. One was the result of double non-septic pneumonia; another was due to the shock and exhaustion of a prolonged labor and many attempts at delivery, the operation being performed upon a dying woman. The third was caused by septic peritonitis from infection of the parturient tract; and only one is attributable to the operation itself, the wound being infected during the operation, an accident easily preventable by sufficient cleanliness and proper technique. This is a mortality of but 3 per cent. On the other hand, almost every death following Cesarean section is due to septic peritonitis or to hemorrhage.

FIG. 1.



Pelvimeter measuring distance between outer surface of symphysis, just below the upper edge, and the promontory of the sacrum.

FIG. 2.

Pelvimeter measuring the thickness of the upper part of symphysis. This measurement is to be subtracted from the other. A curved tip is inserted in the pelvimeter for this purpose.

As long, therefore, as the two operations hold this relation to one another in results, symphysiotomy must be the choice of the conscientious operator whenever it is practicable. It follows, consequently, that every one interested in the practice of obstetrics must to-day be familiar with the indications for and the technique of this operation, and it is to these two phases of the subject that I shall devote the remainder of my paper.

Indications. There are two mistakes to be guarded against in deciding for symphysiotomy in a labor delayed or obstructed by a symmetrically contracted pelvis. One is the resort to this operation when some less radical means would deliver the woman safely of a living child; the other is the attempt to deliver by symphysiotomy through a pelvis too small to permit the passage of a living child, even when the pelvic bones are separated as widely as possible without injury to the sacro-iliac joints. The first mistake has not been uncommon during the excitement attending the revival of the operation. The most notorious example is the delivery by symphysiotomy of a VII-para, who had given birth to her six children spontaneously and had only lost one, which presented by the breech. This mistake is easily guarded against. I have been summoned expressly to perform symphysiotomy more than thrice as often as I have performed the operation. The application of forceps to the head above the brim will, in practised hands, often secure engagement, and if the attempt is carefully made no harm is done, even should it fail. Version and extraction are to be considered, too; but the danger of these procedures to the child is also to be taken into

account. With my own experience of three perfectly uncomplicated recoveries from symphysiotomy, I feel disposed to regard this operation with more favor than version and extraction in a markedly contracted pelvis. The opposite error of opening the symphysis when the pelvis is too small to permit of delivery by this means is more difficult to escape. It will only occur, of course, in a pelvis with a conjugate of 67 mm. or under, a degree of contraction not often seen among us; and, could we always feel sure of the accuracy of our pelvic measurements, the mistake could be pretty surely avoided. But every one knows that, though we report the dimensions of the conjugate diameters of our cases with great precision, we cannot feel absolute confidence that our measurements are always correct. The estimation of the conjugate from the diagonal conjugate is liable to serious error, even though we allow for an increase in the conjugato-symphyseal angle and in the height of the symphysis. For example, I have operated on two rachitic dwarfs, primiparæ, each with a diagonal conjugate of scant 9 cm., say 8¾, and therefore with a true conjugate presumably of not less 67 mm. In one I extracted the child with the greatest ease; in the other I broke the child's clavicles and its neck in my efforts to pull the head, coming last, through the contracted pelvis, though the symphysis gaped widely. In both cases the head measurements were almost identical. To avoid this possibility of false calculation I have had constructed a pelvimeter to measure the conjugate as nearly directly as possible. The idea, you will recognize, is borrowed from Skutsch; but this pelvimeter, I think, is better than his.

I can imagine no more embarrassing predicament in obstetrics than a failure to extract the head after opening the symphysis. I should feel reluctant to operate again at the lowest limit for symphysiotomy unless I had the opportunity first to induce labor and artificially dilate the cervix some two or three weeks before term. In this case I should not hesitate to operate with a conjugate as low as 65 mm., and I believe delivery might be possible with a conjugate of only 6 cm.

Technique.—It is unnecessary to describe in detail all the steps of an operation with which the medical world has of late become so familiar. I shall limit this section of the paper to the discussion of certain moot questions in the technique upon which I entertain strong convictions.

The incision in the lower abdomen, extending to within about three-quarters of an inch of the symphysis, and the severance of the joint from below upward and within outward subcutaneously, are much to be preferred to the incision directly over the symphysis. By the former the wound can easily be kept clean in the lying-in period. Troublesome hemorrhage is not so likely, and the urethra is free from danger. By the latter I do not see how the wound can be kept clean with any degree of certainty. Hemorrhage of an alarming character is to be expected, and the urethra is more likely to be cut. The complaint from some German writers in regard to the fever that follows symphysiotomy is to be explained, I think, by their preference for the direct incision. I have had two entirely afebrile convalescences, and in the third case fever only developed on the twelfth day in consequence of a phlegmasia that had no connection with the operation at all. On the whole, I prefer the old-fashioned model of the Galbiati knife. The long beak enables one to cut almost entirely from below upward, and thus avoid bleeding as far as possible. Dr. Harris's modification of this knife is so closely adjusted to the posterior surface of the symphysis that it cuts as quickly forward as it does upward, and is likely to wound the veins behind the clitoris. I can see no reason for suturing the symphysis. This is troublesome, prolongs the operation, favors inflammation in the joint, and is not necessary. A firm pelvic binder and a close apposition of the thighs, tying the knees together, if necessary, will secure a better approximation of the bones than any stitch could do. It is surprising to read the different methods proposed in recent German articles for suturing the symphysis. I have not yet done this, and, as each one of my cases has had a firmly united pelvis without it, I believe that it is entirely unnecessary.

A very valuable preliminary step in the operation itself is the thorough dilatation of the cervical canal. As the head does not enter the superior strait in the majority of cases in which symphysiotomy is called for, the os will not be well dilated, no matter how long labor may have lasted, so that the cervix will present a serious obstacle to quick delivery after the symphysis is cut, especially in primiparæ. For this purpose I have a Barnes bag twice as large as the largest sold in the shops. After using the three ordinary sizes, allowing each to remain in the cervical canal for some time, I have inserted this largest one, distended it to its full capacity, and allowed it to remain in place for at least an hour. Then, if it is necessary (as it usually is) to apply forceps or to perform version, the child can be extracted as rapidly as the operator desires. In one of my cases, in a primipara, over thirty years of age, the child, now living and well at the age of six months, was delivered in less than five minutes after the pelvic bones were separated. When the artificial dilatation of the cervical canal was begun in this case, it would just admit one finger. Finally, as to the fixation of the pelvis, the cleansing of the vulva, and the care of the abdominal wound. The first is secured by broad rubber adhesive strips and a stout obstetric binder, coming well down over the trochanters. The vulva is protected by a pad of salicylated cotton and carbolized gauze, and is cleansed by a stream of water from a fountain syringe, several times a day, the patient resting upon a bedpan. The wound need not be disturbed for more than a week. When it is desired to expose it, the lower part of the binder is unpinned, a window cut in the adhesive strips, which are reinforced by others over them when the dressing is completed. In this way the pelvis need not be subjected to the least strain.

To prevent stretcthing of the new-formed union in the joint I have kept my patients in bed five weeks.

Novel Prizes are offered by a member of the Anthropological Society, of Washington, D. C., for the best essays (3000 words) on the subject of the elements that go to make up the most useful citizen of the United States, regardless of occupation. The first prize is of $150, the second of $75, and the essays are to be submitted before March 1, 1894. Particulars may be obtained of the Society. Here is a chance for the literary doctor, and we hope he may win!

AN OUTBREAK OF TYPHOID FEVER PRESENTING UNUSUAL FEATURES.[1]

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THE atypical forms of typhoid fever during the past few years have received much attention, and doubt has frequently been expressed whether atypical cases should be considered typhoid at all. A singularly favorable opportunity for studying cases of this character was furnished by an outbreak at the University of Virginia in the winter and spring of the present year (1893), and I propose to give a brief account of the outbreak in this paper.

In order to understand the origin of these cases it will be necessary to state briefly the arrangement of the lodging-rooms and eating-rooms at the institution.

The buildings of the University used as dormitories by the students are scattered over a space of ten or twelve acres, and there are four hotels, or "mess-halls," at which the students get their meals. A student can select his own boarding-house, so that each hotel has "table boarders" from all parts of the University grounds.

At the time of the outbreak—on February 17th—there were about 530 students at the University. Of this number about 350 roomed in the University buildings and took their meals in the University hotels.

There had been no typhoid fever at the institution for many months, nor were there any cases in the vicinity except one, of which I shall speak later.

On the 19th of February I was consulted at my office by Mr. D. D. H., a law student, who complained of loss of appetite, debility, and headache; his temperature was between 101° and 102°. Influenza was prevailing at the time, and I thought it probable that he was suffering with an attack of that disease, but a few days later he sent for me, and I found him with a well-marked attack of typhoid fever, which pursued a mild but typical course and ended in recovery.

A few days later I saw Mr. K., an academic student, who had severe headache, a temperature of 104°, aching in his limbs, and constipation; he had been sick only twenty-four hours; he was given salophen in six-grain doses every four hours, and the next day he went to his home in a neighboring city, where, as I was informed, he had a mild attack of typhoid fever.

These two young men lived in different parts of the University, but took their meals at the same boarding-house and sat at adjacent tables.

Perhaps before going further I should mention that the water-supply of the University is perfect in all respects, and the system of sewerage is excellent.

Just after the occurrence of the second suspicious case I found that there was a negro man—a waiter—ill with typhoid fever in the basement of the hotel where these young men got their meals. On further inquiry I found he had been ill for about four weeks, and that another waiter who lived outside of the University grounds also had the disease. I did not see either of these cases, but was informed by the physician who attended them that they were typical cases of typhoid, one being quite severe in character.

Between this time and the 1st of April there were ten additional cases, making fourteen in all, and these patients lived in different parts of the University grounds, some being a quarter of a mile apart, *but all took their meals at the same hotel.*

Immediately after the occurrence of the second case and the discovery of the ill man in the basement of the boarding-house, the dining-room was closed and a thorough inspection of the building and premises was made by the health committee, consisting of three physicians and two engineers. Nothing was found about the house to account for the sickness, and an examination was then made of the milk-supply. It was found that a part of the milk-supply of this boarding-house came from the dairy of the keeper of the house. An inspection showed that the dairy was situated some distance from the University and on the banks of a creek, into which one of the main University sewers opened and at a point *above* the dairy; it was further found by questioning the milkman that he got water from a point about twenty yards below the opening of the sewer, to wash the cows' udders before milking. Besides this there had been a case of typhoid fever on this creek a mile above the dairy during the previous autumn, and the discharges from this patient—an ignorant negro—were thrown upon the ground without disinfection.

Before proceeding to consider the peculiar features of some of these cases, I wish to emphasize certain points that I have already mentioned:

1. There had been no typhoid fever in or around the University for several months, so far as I could learn, except one case in the vicinity, from which infection was practically impossible.

2. Between the middle of January and the 1st of April there occurred fourteen cases of continued fever among persons living or employed in the University grounds.

3. The persons who had this continued fever had rooms, in many cases, widely separated from each other, but all took their meals at the same hotel.

4. The water-supply of this hotel was the same as that of the other hotels and of the other parts of

[1] Read before the Section on General Medicine of the Pan-American Medical Congress, September 6, 1893.

the University, and the sanitary condition of the building was good.

5. A part of the milk-supply was obtained from cows whose udders had been washed with water contaminated by sewage, and probably infected with typhoid-fever germs. It was in evidence also that at least five of the fourteen persons used milk at every meal. Probably there were others who did so, but I could only get definite information as to five.

Of the fourteen cases of this continued fever, ten were under my professional care and four under the care of other physicians, though I saw one of these four cases at the commencement of the attack, and another near convalescence; several of my cases were seen also by my colleagues, Drs. Towles and Barringer, of the University of Virginia. Of the fourteen cases one was in a child, twelve years old—the daughter of the hotel-keeper; the others were in young men between the ages of 18 and 25 years.

Of the ten cases under my immediate care there were but three that pursued anything like the typical typhoid fever course. The first patient, Mr. D. D. H., was taken sick on February 17th, and his evening temperature was normal for the first time on March 5th; his temperature during this time ranged between 101° and 103°. The eruption in this case was well marked; the bowels usually moved spontaneously, but there was at no time any diarrhea. The only complication was an inability to pass urine, which for a week necessitated the use of the catheter.

Mr. G. was taken sick on March 4th with nausea and vomiting. His temperature ranged from 101° to 105° till March 25th, when he had a profuse hemorrhage from the bowels, with extreme prostration; the hemorrhages recurred at intervals until the 30th; there were no more hemorrhages after that time, but the stools were liquid, very offensive and passed involuntarily. On April 5th, the morning temperature was 101° and the evening temperature 103°, and by the 10th the patient was free from fever, but there was still some delirium. In two or three days, however, this passed away, and he seemed to be progressing very favorably for a week, when he was suddenly taken with violent convulsions, which recurred in rapid succession till his death, twelve hours later. No autopsy could be obtained.

There was but one other fairly well-marked case of typhoid fever among my ten cases. Mr. W. was taken sick on March 14th, but I did not see him till the 19th; his temperature then was 104.5°; his pulse was rapid, and his skin wet with sweat; he had severe headache, but there was no other disturbance of any kind. His evening temperature did not fall to the normal for four weeks, and ranged during the attack between 103° and 99°. A peculiarity about this case was that the temperature was higher during the first week than at any subsequent time. His bowels were constipated throughout and had to be moved by enemata. There was no eruption in this case, nor was there any tympanites, and though I have placed it in the list of well-marked cases, it was far from typical.

The seven remaining cases presented more or less atypical features, and I shall consider the different symptoms in order, to show their atypical course:

1. The ONSET was gradual in six cases, and sudden in one, commencing in this latter with a chill.

2. The DURATION was six days in one case, eleven in another, fifteen days in a third, eighteen days in a fourth, and over four weeks in the remaining cases.

3. The TEMPERATURE in five cases was higher during the first three days than at any subsequent time; the evening temperature on the day that I was called—the first or second day of sickness—being 103.7°, 102.8°, 102°, 101.8°, and 102.6° in the respective cases. One of these cases lasted over four weeks. In the remaining cases the temperature was very variable and the attack in each lasted over four weeks. For example, Mr. A. C. I., a medical student, had a temperature of 102° on the morning of April 1st, 103.4° in the evening; on April 3d, A.M. 100.6°, P.M. 103.4; April 9th, A.M. 99.6°, P.M. 103.5°; these striking variations were entirely irrespective of treatment and were marked throughout the whole attack; this was the only case except the fatal one already mentioned, in which there was diarrhea.

The following case presents somewhat similar variations of temperature: Mr. D. P. was taken sick on

March 26.	Temperature,	A.M.	100.5°,	P.M.	103°
April 1,	"	"	100.6°,	"	103.2°
" 3,	"	"	100.2°,	"	101.6°
" 9,	"	"	100.6°,	"	99.1°
" 11,	"	"	98.2°,	"	99.4°
" 15,	"	"	99°,	"	99.9°
" 17,	"	"	99°,	"	102°

Neither of these patients had ever had malaria in any form, nor did they live in malarial districts, one being from Highland County, Va., the other from Winchester, Kentucky.

4. The PULSE presented no features of especial interest; it was rarely over 100, except in two cases—the one in which there was hemorrhage from the bowels, and in another, that of Mr. D. P., which ran a mild but tedious course.

5. The DIGESTIVE SYMPTOMS. There was loss of appetite in all cases after the first week, but during the first week two of the patients complained of being very hungry. Nausea and vomiting were present for a short time in two or three of the cases, but these symptoms were not marked. Diarrhea occurred in only two cases—that of Mr. G., in which there was hemorrhage from the bowels, and that of

Mr. A. C. I.; in both it was very obstinate and troublesome. In all the other cases constipation was a marked symptom. Iliac tenderness was present in five cases, and tympanites in two.

6. The ERUPTION was present in only two of the ten cases under my care.

7. The URINARY SYMPTOMS were not marked. In one case there was retention of urine, requiring the use of the catheter. Ehrlich's test (for diagnostic purposes) was not employed in any of the cases, as previous experience had satisfied me that it was of little value.

8. WEAKNESS, emaciation, and anemia were marked symptoms in the later stages of all of the cases.

I have thought it well to put the history of this outbreak of fever on record for the following reasons:

1. It furnished a singularly favorable opportunity for studying an unusual source of infection.

2. In an outbreak—of which the cause could be determined with reasonable certainty—occurring at a time when no form of continued fever was prevailing in the community, we find a number of persons infected from the same source, some of whom presented the typical features of typhoid fever, while others had a fever which would never have been classed with typhoid but for the surrounding circumstances.

It is of course conceivable that the cases that seem to me to be atypical typhoid fever were really of a different character, but in view of the facts that all originated from the same source and all grades of severity were observed, such a conclusion seems to me scarcely tenable.

CLINICAL MEMORANDA.

PROFOUND TOXEMIA WITH SLIGHT TUBERCULOUS LESIONS.

BY WILLIAM OSLER, M.D.,
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THE symptoms of a profound intoxication in tuberculosis are met with under three conditions: First, in those rare cases, described most commonly in children, in which death may occur with symptoms of a profound toxemia before there are any extensive localized foci of disease. "The children have presented in the course of the disease all the signs of a profound intoxication, and as the tuberculous lesions of the lungs and all other organs are altogether insufficient to produce death, it is quite reasonable to attribute the fatal results to the bacillary intoxication." (Aviragnet.[1]) These are the instances of the *fièvre infectieuse tuberculeuse suraiguë*. Second, acute miliary tuberculosis is often accompained with toxic features, giving to many of the cases clinical pictures of severe typhoid fever. Post-mortem, miliary tubercles are found extensively throughout the viscera and on the serous surfaces. Third, in chronic pulmonary tuberculosis there may develop, with or without fever, a profound toxemia, with dry tongue, delirium, rapid pulse, and signs of intense intoxication. The patient may be admitted to hospital unconscious, with a normal or subnormal temperature, and, as in a case which was under my care at the Philadelphia Hospital, the autopsy alone revealing the true nature of the disease.

The following case may perhaps be regarded as an instance of the *febris tuberculosa peracuta*. The striking features were the existence of a local tuberculous adenitis in the group of left cervical lymph-glands; a miliary tuberculosis of very moderate intensity in the liver and spleen; and a clinical picture of the most profound toxemia.

Joseph S., aged forty-seven, a shoemaker, was admitted to Johns Hopkins Hospital, March 13, 1893, with a swelling in the left side of the neck, cough, loss of appetite, and delirium.

Nothing very definite could be learned about the family history. The patient was married and had six living children. His wife stated that he had had a cough the summer previously for about two weeks, and that he had not been very strong all winter, and had complained at times of pains in the abdomen. He had occasionally had chills and fever and had sweated very much. The existing illness had begun five or six weeks before, with chilly feelings and loss of appetite. About a week later it was noticed that the glands on the left side of the neck were swollen. The man continued at work, however, until three weeks before presenting himself. He had neither nausea nor vomiting, but there was loss of appetite and progressive weakness and fever. For fully two weeks he had been irrational, and at night quite delirious. The chief complaint had been the feeling of profound weakness, and for more than ten days he had been confined to bed, too feeble to walk.

On admission the patient looked very ill; the temperature was 102.7°, and rose by 6 P.M. to 105°. Throughout the day before the temperature had ranged from 103° to 105°, and the man had been delirious. The patient was a fairly well nourished man, and did not look as if he had been ill for any great length of time. The complexion was pale, but the lips and mucous membranes were of fairly good color. The pupils were of medium size, and reacted to light; there was no strabismus. The tongue had a thick, yellow coating. The pulse was rapid, 124, regular, but soft, and the radials compressible. The respirations were a little hurried, 36 to the minute, but the man did not show any marked respiratory distress, and lay comfortably with his head low.

On the left side of the neck behind the angle of the jaw, and in the lower triangle the lymph-glands were moderately enlarged, hard, and not painful. The largest was about the size of a horse-chestnut. There were no other lymphatic enlargements.

The chest was symmetrical, the expansion equal, and there was no change on percussion; the respiration was everywhere clear, with the exception of a few sibilant râles at the bases. The expectoration was muco-purulent, small in amount, slightly blood-stained, and repeated examination failed to discover the presence of

[1] De la Tuberculose chez les Enfants. Paris, 1892.

tubercle-bacilli. The heart-sounds were normal and there was no increase in the cardiac dulness.

The abdomen was symmetrical, full, and generally tympanitic. The patient had five movements of the bowels in the first thirty-six hours after admission. They were soft, but not in any way distinctive. The edge of the spleen could be easily felt and extended three fingers' breadth below the costal margin. The urine was dark reddish-brown in color; 660 c.c. were voided in the twenty-four hours, containing a small quantity of albumin and a few granular and hyaline casts. There was a decided diazo-reaction. The patient was irrational and frequently spoke in an irrelevant manner.

On the 15th, two days after admission, the patient was shown at the clinic, and I extract the following remarks from the report of my stenographer. "As to the nature of this interesting case, from the appearance of the man and the history you would think at once of typhoid fever, though the temperature-chart is unlike this disease in the fourth or fifth week. Still the general features, the enlarged spleen, the diazo-reaction, and the negative condition of the examination render this diagnosis highly suggestive. Against this, however, there are several important objections. The temperature-range, as I mentioned, is more continuous than is usual in typhoid fever at this stage. The abdominal symptoms are slight, and there are no rose-spots, though it is true the spleen shows marked enlargement. Bronchitis is not an infrequent complication of typhoid, and at the bases it is of course common to have diffuse râles. A feature that suggests another diagnosis is the enlargement of the lymph-glands on the left side of the neck, which has increased during the patient's illness. There can be no question that the enlargement here has nothing whatever to do with the ordinary swelling of the salivary glands seen in typhoid fever. Here the affection is evidently in the lympathic glands, and this important fact, with the protracted fever, the delirium, and the enlargement of the spleen, suggests rather that the patient has acute tuberculosis. Two other points of interest may be mentioned. The blood-count shows a marked diminution in the number of leukocytes, only 2000 per c.mm. being present, which is, however, rather against tuberculosis. There is no optic neuritis, and there are no tubercles in the choroid."

The critical condition of this patient continued throughout the 16th and 17th. The temperature ranged from 103° to 105°, rarely falling below 103.5°. The pulse became more rapid, from 140 to 160; the abdomen became distended; the respirations very shallow and rapid; and the patient died early on the morning of the 18th.

REPORT OF THE AUTOPSY (by Dr. Flexner).—Punctiform hemorrhages were found on the skin of the shoulders and neck, and subcutaneous hemorrhage at the back of the neck on the right side, as also hemorrhages in the subcutaneous fat in several situations. The muscles were of a deep-red color. The peritoneum was smooth; the diaphragm on the right side was at the fifth rib, on the left side at the upper margin of the sixth rib.

Both layers of the pleura were united by old adhesions, some of which were pigmented. The lungs themselves were crepitant and deeply pigmented; the lower lobes were congested, and, on section, serum and blood escaped. The bronchi contained frothy mucus. Along the posterior edge of the right lung the pleura was greatly thickened, measuring 3 mm. in thickness. Beneath it the lung was pigmented. The lower lobe of the right lung presented areas of fresh consolidation, and the pleura was covered with fresh, granular fibrin. On section the lung was deep grayish-red in color, and portions excised sank in water. The heart weighed 270 grams. The pericardium was smooth, the valves normal. The heart-muscle was soft and somewhat friable. The liver weighed 2850 grams; the surface was smooth, and there were whitish and whitish-yellow miliary tubercles beneath the capsule, irregularly scattered and not in great numbers. The spleen weighed 500 grams; the section was dark-red in color; the brown pulp was abundant, and there were numerous large tubercles in its substance. The kidneys presented a few atrophic patches in the cortex; the striæ were coarse and pale; the consistence a little firm. There was nothing of special note in the pharynx, stomach, or esophagus. Peyer's patches were a little swollen; the mucous membrane of the intestines was somewhat congested. The appendix vermiformis was obliterated.

On the left side of the neck a mass of tuberculous glands extended from the angle of the jaw to the clavicle. Some of them were closely adherent to the veins in the locality. On section they were yellow and caseous. The group of glands above the clavicle, and the mediastinal glands also, contained caseous tubercles. The bronchial glands were enlarged, deeply pigmented, edematous, but there were no tubercles visible to the naked eye.

On microscopic examination of the solid areas of the lung no tubercles were to be seen. There were numbers of diplococci, with distinct and easily-staining capsules, obtained from the lung on cover-slips. Cultures made from the lung, spleen, and kidneys remained sterile.

The groups of enlarged lymphatic glands in the neck in this case really led to the correct diagnosis. The general condition and appearance of the patient were those of the most severe typhoid fever, though, as I remarked to the class, the fever was rather more persistent and higher than is usual in typhoid fever. The amount of tuberculous infection throughout the body was in reality slight. The tubercles were not numerous in the liver and were only moderately numerous in the spleen. There was no pulmonary tuberculosis and the serous surfaces were not involved. The pneumonia in the lower lobe of the right lung was not extensive, seemed fresh, and evidently had developed within a few days of the patient's death.

A REMARKABLY DISTENDED BLADDER.

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SOME months ago an Italian woman, thirty years of age, a multipara, presented herself in the gynecologic clinic of the Charity Hospital, suffering with an abdominal tumor about the size of a nine months' utero-gestation. The swelling was perfectly symmetrical, extending in the median line within an inch of the ensiform

cartilage and touching the ribs on either side for a distance of several inches. She stated that her menses had stopped four months previously, but that the tumor had only commenced to grow six weeks before, and had been in its present condition one month. Her general condition was much below normal; the face wore an expression of great pain and anxiety; respiration was rapid, the pulse quickened and thready, and there was abdominal tenderness, with constant elevation of temperature, especially marked in the evening. She passed a small quantity of urine at irregular intervals, but on the slightest exertion was unable to retain it. Any change of position would cause an unexpected flow of urine mixed with blood and mucus. On examination the mucous membrane of the vaginal canal was found to be so edematous that its folds protruded at least an inch out of the vulva. The cervix was reached with much difficulty and found to be situated in the anterior cul-de-sac, pointing upward and backward. It was soft, much congested, and of a bluish tinge. At the junction of the cervix with the body of the uterus there was a marked retroflexion, the fundus extending downward and backward, reaching within an inch and a half of the anus. Passing one finger in the rectum the other in the vaginal canal, ballottement was well marked. The uterus was of the size of that of a four months' pregnancy. During the examination the patient passed a large quantity of decomposing urine. A catheter was introduced in the bladder, and about one pint of urine withdrawn, when it ceased to flow. The pain was so great that an anesthetic was administered, the legs flexed on the abdomen and the tumor pushed well down. The edema of the vaginal canal was so great that nothing definite could be ascertained by touch through the anterior cul-de-sac, except that the tumor was fluctuating, with apparently thin walls. An exploring needle was introduced just below the umbilicus, and a dark-colored fluid drawn off, with a decided urinous odor.

A large glass catheter was now passed six inches in the bladder. There was a rapid flow of urine, with a synchronous decrease in the size of the tumor that cleared up the diagnosis at once. In one week she was able to pass her urine at will and the uterus had risen to almost a normal position, with every indication of a continuance of pregnancy to full term. Ten days later her temperature suddenly rose to 103°, the abdomen became tense, and vesical tenesmus was so great as to require an anodyne. The small quantity of urine passed at short intervals was mixed with blood and mucus. In attempting to catheterize her it was noticed that the urethral canal was completely occluded. The obstruction was gradually withdrawn, as far as practical, and cut off, the pedicle being pushed back into the bladder. Two days later the remaining portion became detached and was expelled. It proved to be the entire mucous membrane of the bladder which had sloughed off. The openings of the ureters were well-marked.

The distressing symptoms gradually subsided, and in a month after her admission to the hospital she was discharged apparently in perfect health. Several weeks after her departure a miscarriage was produced by an accidental fall from a wagon. The patient was seen at intervals after leaving the hospital, and she suffered no inconvenience whatever from her former bladder-trouble. The two most remarkable features of this case were the great distention of the bladder, without rupture, and the subsequent exfoliation of the entire mucous lining, with absolute recovery, the functions of the organ being completely restored.

17 BARONNE STREET.

MEDICAL PROGRESS.

External Urethrotomy followed by Septic Arthritis.—At a recent meeting of the Orleans Parish Medical Society, FENNER reported the case of a man, twenty-one years old, who came under observation suffering from urethral stricture. He passed his urine with straining and in a very small stream. This condition had been noticed for three months, and had grown progressively worse. A filiform bougie was introduced, with the intention of passing a Gouley sound. The whalebone was old and defective, and, slipping from the grasp of the assistant who held it, was doubled upon itself by the sound and broke off in the urethra. External urethrotomy was now performed, the whalebone extracted, and the whole canal was dilated with steel sounds. Considerable traumatism was inflicted upon the penile portion in this operation. The patient was put to bed, and in the evening his temperature was 101°. For nine days the temperature ranged between 99° and 100°, when it rose to 103°. From this time it remained for eleven days very high, but irregular, owing to the use of antipyretics. On one day the thermometer registered 105.5°, and on another it was again above 105°. On the nineteenth day the man was transferred to a medical ward, on the suspicion of enteric fever. From the day after the operation he complained of pain in the urethra and perineum, but no sign of a phlegmon could be discovered, and the urine was only slightly tinged with mucus. With the advent of the high fever came intense lumbar pain, with some tympanites and tenderness over the abdomen. The man remained in the medical ward for thirteen days, during which there developed an arthritis at the left wrist and at the right knee and elbow. The temperature now ranged between 99° and 102°, generally being about 100°. The condition was one of general sepsis. Abscesses formed and were opened on the shin below the inflamed knee, and in the axillæ. From the right elbow and knee fluid was removed with the aspirator, and in this was found a considerable amount of pus. The joints were immobilized with plaster casts, and in the case of the knee an ice-bag was kept applied for three days before the plaster was applied. In addition to these serious joint-troubles a profuse watery diarrhea for a time complicated the course of the case. Thereafter the man began steadily to improve.

Obstetrics Among the Negroes.—At the recent Pan-American Medical Congress DE SAUSSURE (*American Journal of Obstetrics*, November, 1893, p. 717) read an interesting paper in the Section of Obstetrics upon "Obstetrics among the Negroes of South Carolina." Considerable difficulty was encountered in obtaining exact information, on account of the indifference of the negro as to time and figures. It was found that menstrual life began at the age of 13.1 years. The negro is

not virtuous, and matures early. The average age for the menopause was 48.8 years, though in instances women have been delivered at the age of 53 years. Amenorrhea, dysmenorrhea, and uterine hemorrhage are extremely rare. The negro is more fruitful than the white, the average number of children to the family being 6.8, although for several years past the negro has been shirking his responsibility and taking means to prevent the increase of his family, so that within a few years it is possible that the number of children will be less than 6. With the negro pregnancy is physiologic, not pathologic. Eclampsia is not unusual, and may find its explanation in poverty and anemia or in the imitation of so-called civilized habits of the whites. The induction of abortion before the fifth month is becoming quite common, and is accomplished not by instruments but by drugs. If the abortion occur not later than the fifth month, neither midwife nor physician is called. Notwithstanding the great frequency of abortion, puerperal fever or septicemia is extremely rare. This may be accounted for by the fact that vaginal examinations are seldom made and instruments almost never employed. Syphilis is extremely common among the negroes of the South, at least 70 per cent. having inherited or acquired the disease. The pelvic diameters are larger than in the whites. Labor is a simple act, the physician rarely being called, nine-tenths of the deliveries being accomplished by midwives. Vaginal examinations are not made, and labor almost always terminates without accident, notwithstanding the unfavorable surroundings of the parturient. Among 15,538 deliveries there have been 57 deaths from puerperal infection, including cases of peritonitis, in spite of the fact that the dirt and filth among the negroes is almost inconceivable.

The Relation between Ametropia and Epilepsy.—At a recent meeting of the Ophthalmologic Society of the United Kingdom, DODD (*British Medical Journal*, No. 1713, p. 947) reported the outcome of comparative observations upon the refractive conditions present in 100 epileptics and 50 healthy persons. The observations included examination of the pupils and fundus oculi; the determination of the vision and refraction before and after mydriasis; and the result of treatment by glasses. The comparison showed that of simple hypermetropia there were 28 per cent. less in the epileptic than in the apparently normal class; of astigmatism there were 26 per cent. more in the epileptic division than in the normal one, the amount being made up mainly of compound hypermetropic astigmatism. Of the 100 consecutive cases of epilepsy, 75 were directed to wear glasses. Of this number 23 did not wear them or failed to return. Of the remaining 52, 13 after wearing the glasses for periods varying from one to two months had no attacks; 3 remained in *statu quo;* in 36 the condition had improved after wearing the glasses, the improvement in the majority being marked. In all cases the ordinary treatment had been continued. The inferences drawn are that, given a certain condition of instability of the nervous system, errors of refraction may excite epileptic attacks, and that the correction of errors of refraction, in combination with other treatment, will in many cases cure or relieve the epileptic condition; although in some cases the epilepsy will continue after the refractive error has been corrected, generally in a modified form in consequence of other irritation, even though the refractive error may have been the exciting cause of the epilepsy.

Twenty Cases of Hydatid Disease.—PUKY (*Ungar. Arch. f. Med.*, 1893, i, H. 5, 6; *Centralbl. f. die med. Wissensch.*, 1893, No. 42, p. 695) has reported the results of a study of twenty cases of hydatid disease in which he has operated. These were distributed among eleven males and nine females. Of the former the youngest was eighteen years old, the oldest forty-seven; of the latter the youngest was likewise eighteen, the oldest sixty-six. Only four of the whole number terminated fatally. Of these one was a patient in whom the diagnosis was not clear and antisepsis was defective, death resulting from pyemia. In two cases death resulted from pyo-pneumothorax. In the fourth the disease was seated in the liver, in the abdominal cavity, in the kidneys, in the spleen, and in the lungs, and death resulted from repeated hemoptysis. In the remainder recovery ensued without complication. In all of these the possibility was demonstrated of closing the peritoneal cavity so thoroughly (by means of a suture recommended by Max Müller) that not a drop of the cyst-fluid entered. In none of these cases did peritonitis develop, and tenderness was not observed in or adjacent to the wound. The fluid evacuated from the cysts was in some cases perfectly clear, and in some contained a number of larger or smaller vesicles. In other cases the cyst was removed entire. As a rule the patients were able to leave their beds ten or twelve days after operation. At the end of this time the dressing was changed but once a day.

Cyanosis from a Patulous Foramen Ovale in an Adult.—PIC (*Prov. Méd.*, June 17, 1893; *Centralbl. f. klin. Med.*, 1893, No. 43, p. 923) reports the case of a man, forty-two years old, in which, following an attack of pneumonia, intense cyanosis developed, which disappeared in a short time, to reappear at irregular intervals, usually after exposure to cold. The patient came under observation in such an attack of cyanosis. The lower extremities were edematous, and blowing systolic murmurs could be heard over all of the valvular orifices, the point of maximum intensity being at the ensiform cartilage. The patient grew rapidly worse, and succumbed to an intercurrent attack of pneumonia. Upon post-mortem examination, in addition to the pulmonary condition, the left ventricle was found hypertrophied, the right ventricle and the right auricle dilated and hypertrpohied, the tricuspid valve incompetent, and the duct of Botal patulous, readily permitting the passage of the little finger. It is pointed out that perviousness of the foramen ovale may be either absolutely latent or attended with congenital cyanosis, or with cyanosis late in life. Under the conditions last named, it is probable that the duct had not perfectly closed, and that undue pressure within the right auricle has led to the entrance of venous blood into the left auricle.

The Etiology of Scorbutus.—BABES (*Deutsche medicinische Wochenschrift*, 1893, No. 43, p. 1035) has succeeded in isolating from the gums in two patients with

scorbutus, a slightly curved bacillus, 3 μ long, 0.3 μ thick, and pointed at the extremities. In two rabbits inoculated with proper precautions with an emulsion of a bit of the affected tissue, hemorrhagic extravasations took place in various parts of the body. The organisms could not be found in the blood or in the other fluids of the body. They were usually found in association with streptococci, and it was only by first treating the culture-medium with streptococci and then sterilizing it that the bacilli could be isolated. Inoculation of animals with pure cultures of the organisms in large quantities gave rise to abscess-formation and subcutaneous and subserous hemorrhage, and was followed by death, although dissemination of the bacilli could not be demonstrated. The opinion is expressed that the organism found is one of those ordinarily present in the mouth, and that in states of depression and privation it finds the conditions favorable for its vegetation. Its detrimental action is thought to be due to the generation of an agent that exerts a poisonous influence upon the bloodvessels and the blood-corpuscles.

Sudden Death from Pulmonary Hemorrhage in a Young Child.—HOWARD (*Archives of Pediatrics*, vol. x, No. 11, p. 940) has reported the case of a girl, two years and ten months old, with a good family history, who had been "delicate," but had escaped the usual diseases of childhood. Three days before death examination disclosed the existence of condensation over the central portion of the left lung. There was some cough, fever, and dyspnea, but no expectoration, and the child seemed comfortable and continued to play in the open air. Death suddenly took place at night from pulmonary hemorrhage. Post-mortem examination disclosed the existence of primary caseous tuberculosis of the bronchial glands, with calcification, and secondary chronic tuberculous pneumonia in the left lung, with cavity-formation. The hemorrhage had taken place from the rupture of a large vessel in the cavity in the lung. The bronchi and air-vesicles of the right lung were filled with aspirated blood. The mesenteric glands were enlarged, and on section several proved to be the seat of miliary and caseous tuberculosis. The spleen presented a condition of acute miliary tuberculosis.

A Case of Poisoning with Kerosene Oil.—MORTON (*Indian Medical Record*, vol. v, No. 7, p. 222) has reported the case of an old man, under observation for insanity, who in a fit of temporary mania swallowed "half a bottle" of kerosene, and immediately afterward took two ounces of ammonium carbonate. When seen, two hours after the accident, the patient was in collapse. His lips were blue and his face generally cyanosed. The pupils were dilated, and there was complaint of great difficulty in swallowing. A good deal of blood had been vomited and coughed up. Bismuth and soda were administered and warmth was applied to the body. For some days the dysphagia continued, with a sense of rawness of the throat. The food, given in teaspoonful quantities, was occasionally vomited. At no time was there diarrhea. For a week after the accident the urine was passed in small quantities. A month elapsed before recovery was complete. Lozenges of cocain afforded relief from the dysphagia.

THERAPEUTIC NOTES.

A Case of Peritonitis Cured by an Injection of Camphorated Naphthol.—At a recent meeting of the Société Médicale des Hôpitaux, RENDU (*Le Mercredi Médical*, 1893, No. 44, p. 531) presented a woman who was greatly emaciated when she came under observation, with the abdomen greatly distended and accumulations of fluid in both pleural cavities, and the physical signs of pulmonary tuberculosis. The affection had set in with digestive derangement, and was attended with alternate diarrhea and constipation. After eight or ten days of observation some seven quarts of fluid were removed from the peritoneal cavity, and between two drams and two drams and a half of camphorated naphthol were injected and permitted to remain. Slight febrile reaction followed, but this soon subsided. The effusion did not recur, but a hard mass formed which gradually disappeared. The pleural effusions also disappeared, the patient increased in weight, and perfect recovery ultimately ensued.

For Offensive Breath.—

℞.—Tinct. myrrhæ } . . āā 12.
Tinct. lavandulæ }
Glycerin. } . . āā 30.
Liq. sodæ chloratæ }
Infus. salviæ . . . . . 250.—M.
S.—Use as a gargle.

℞.—Thymol. 0.3
Ol. menthæ 0.5
Ol. caryophylli . . . . . 1.
Tinct. rhataniæ . . . . . 10.
Spt. cochlear. . . . . 30.—M.
S.—Gtt. x in a glass of water as a gargle.

Corr.-bl. f. Schw. Aerzte.

Caffein Sodio-Sulfate.—With a view of neutralizing the contraction of the bloodvessels that follows the administration of caffein, and thus to augment the diuretic action, HEINZ and LIEBRECHT (*Berliner klinische Wochenschrift*, No. 43, p. 1059) have succeeded in preparing a double salt, the sodio-sulfate, which, in doses of fifteen grains four times a day, they have found to induce diuresis without any ulterior influence upon the circulation, appetite, or digestion. The drug has rather a bitter taste, and is best given in capsules. Lithium and strontium salts have been prepared, in addition to the sodium combination.

For the Relief of Sterility.—BUMM (*Deutsche medicin. Wochenschrift*, 1893, No. 41, p. 1003) has reported a case of sterility in which he afforded relief by massage of the entire uterus, particularly of the cornua, and of the mucous membrane of the cervix, by means of the sound. He recommends the method in cases in which no profound pathologic change exists.

For Whooping-cough BERGEON recommends rectal injections of carbon dioxid, in volumes of a quart or two quarts, given not earlier than three hours after the taking of food, and repeated at intervals of not less than four hours, in accordance with the intensity of the paroxysms. —*Münch. med. Wochenschr.*, No. 44.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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WHAT IS LIFE?

FOR a long time the materialists have been having matters much their own way. With fine impertinence they have affected to consider "science" as pertaining only to things physical, and all the phenomena of living things as readily explained by purely physical forces. There have been such flooding breakers of new knowledge pertaining to the material world that the noses and mouths of all but the best swimmers have been filled with over-much undrinkable sea-water. Now, however, we are beginning to wade on the solid earth of systematized knowledge, and are coughing out the bitterness of our emphatic protest.

It has been the fashion of physiologists—they who deal especially with life—to deny its existence! to jeer at the idea that the heart is anything more than a pump, that all secretion and excretion are osmosis (and osmosis is nothing but the action of capillary and physical forces), that all living functions are purely chemic, and that life itself is explainable in terms of mechanics. Nothing was so vehemently laughed at and even spit upon as the atrocious idea of a vital force.

Back of this dramatic contempt lay the logical creed of atheism and bald materialism. In popular "scientific" writings and periodicals and in the multitudinous plebifications of science—with a capital S—it became common to hear much of the "reign of adamantine and unalterable law," deftly varied with sneers at the mistakes of "Nature," the number of atrophied or useless organs of the body, the stupidity of the God of the special creationists and of the believers who could outfit upright-standing man with such a ridiculous mechanism or lack of mechanism as that of the venous valves—*et cetera, ad nauseam et ad infinitum!* The denial of the metaphysical had to be supplemented by the proof of dunderheadedness on the part of the supposititious metaphysical. The inference was clear that no intelligence whatever is far better than the stupid one that could leave "as many as six useless tubes in the abdominal cavity."

In a late number of the *Fortnightly Review* we find an article by an English professor of chemistry that has been extensively copied, and that well illustrates the same noteworthy puerility of logic and prejudice. The article is a good *résumé* of the progress made by chemists in reproducing synthetically quite a large number of "organic" compounds. In order to illustrate the gloating pleasure with which a few simple and insignificant facts are illogically wrenched and forced into the service and rôle of materialism, we quote a characteristic passage from Professor THORPE'S article:

"That particular day in 1828, when Wöhler first observed the transformation of ammonium cyanate into urea should be accounted a red-letter day in the history of science. This discovery virtually gave the death-blow to the notion that the operations which are concerned in the formation of the chemical products of the organic world are fundamentally different from those which take place in the inorganic world. Urea, as a final product of a series of tissue-changes, is preëminently a typical product of animal life: no more characteristic example of a substance formed by the action of the so-called *vital force* could possibly be adduced. By demonstrating that urea can be made synthetically by ordinary laboratory processes and from substances inorganic in their origin, Wöhler proved that vital force is only another name for chemical action; and that an animal is nothing but a laboratory in which a multitude of chemical changes, similar to those which occur in our test-tubes and controlled by essentially the same conditions, is continually taking place."

This remarkable "scientist" and more remarkable "logician" seems not to suspect that his facts knock his theory into infinite and utter smithereens. He would hardly deny that the glorious synthetic chemist, in making these few poor end-products of vital katabolism, was possessed of and did verily exercise marvellous intelligence in his work. The

article, indeed, sings the praises of the almost divine ingenuity required to make, *e. g.*—urea! To "chemical action" alone is ascribed the synthetic product, and the chemist's action is left out of the count. But it would seem that the chemist's intelligence had something to do with the affair! Well, then! Is not the logical conclusion from this more plain than the biggest nose on the smallest face that to make the amazingly complex anabolic products of living tissues requires a wee bit of intelligence also? The argument is designed to degrade all vital processes to the level of mechanic forces, but to an ordinary unscientific observer it seems to demand of the creator of living tissues of astounding and unimagined complexity a proportioned intelligence of awful and unfathomable degree. If some one of Professor THORPE'S brother-chemists should succeed in making protoplasm synthetically, how justly profound would be Professor THORPE'S admiration of him! If he should succeed in making artificially a ganglionic center, or a whole nervous system, or a self-motile, living organism even of a low order, how limitless would be the veneration of all of us! But, if we remember rightly, there is a chemist who makes protoplasm easily, and who fills the earth with a million varieties of palpitant beautiful organisms. The old name for this wonderful chemist was GOD; the name given Him by the scientists is Nature—sometimes with a capital N, sometimes without. Caught in the crux of the illogical absurdity we have suggested, the scientist has found himself in an unenviable predicament. If, according to Huxleian logic, thought and consciousness are the products solely of molecular changes in the brain, then right and wrong and freedom and religion disappear in the exceptionless laws of the conservation of energy and of rigid necessity.

It is gratifying to note that medical science is quite the first to break through this truly unscientific dogmatism, and to recognize that science pertains to psychologic and metaphysic facts, as well as to material facts, and moreover to acknowledge the logical inductions from physiologic facts, even though they are wholly intolerable and unexplainable. Thus, in EWALD'S *Diseases of the Stomach*, the learned author says:

"Unfortunately we are now nearly everywhere compelled to assume a specific yet absolutely unknown activity of the living cell.

"It is positively demonstrated that the mechanical processes of filtration and diffusion do not suffice to explain secretion, and we must accept the existence of a peculiar activity of the cells.

"Sections of the heart [after all its nerves have been divided] that contain no ganglion-cells continue to beat rhythmically.

"Muscles may both make spontaneous movements, and may also lengthen upon 'stimulation.'

. . . "the unpleasant fact that we know very little about the secretion, absorption, and motility of the stomach. The study of the organ has been undertaken with too many physical propositions, whereas here, as in the digestive tract, biological laws are more important."

In HALLIBURTON'S *Handbook of Chemical Physiology and Pathology* we read:

"The chemical operations performed by the living cell cannot be imitated in the laboratory or explained by any known chemical laws."

At the recent largely attended meeting of the Section on Biology of the British Medical Association Dr. J. S. HALDANE reviewed the progress of physiology during the last fifty years, and showed that the physical and chemic theories as to the nature of life had utterly failed as working hypotheses, and that the vitalistic theory must henceforth be made the scientific working hypothesis.

The same admission is, very grudgingly indeed, but still completely, made by Prof. BURDON SANDERSON in his address before the British Medical Association:

"Mind must be regarded as one of the 'specific energies' of the organism, and should on that ground be included in the subject-matter of physiology.

"If on the one hand protoplasm is the basis of life, on the other, life is the basis of protoplasm."

Then comes the splendid summary of the whole matter by that consummate investigator and master, LIONEL BEALE, Professor of the Principles and Practice of Medicine at King's College, London. We would like to quote the entire address recently delivered at the opening of the course on medicine, but are compelled to restrict ourselves to only a few paragraphs:

"More careful study of the chemical and physical molecular changes and of the circumstances under which they occur will, I think, convince the mind that something far transcending any physical changes and of a different order or nature is requisite before any adequate explanation concerning the simplest life phenomena will be afforded. The more we know about the non-living, the wider and deeper becomes the gulf by which it is and has been separated from the living. In all these physical and chemical hypotheses of life, where is the evidence of progress?

"It seems to me that the evidence in favor of the absolute separation between the living and the non-living

state is conclusive beyond question, whilst every attempt to prove the contrary—that the living and non-living are one, or that the non-living gradually passes into the living state—has signally failed. The nature of life has not been and cannot be demonstrated, but that life-power belongs to a category far removed from that in which every form of energy, of chemical action and of atomic machinery would be placed seems to me to be abundantly proved by scientific observation and experiment.

"The hiatus has not been bridged and cannot be bridged even in thought at this time. The difference remains absolute, not gradational. Most of the arguments of the scientific kind against belief in God may be traced to the primary belief in the assumption that the living and non-living are one, backed by ingenious speculations invented for the purpose of convincing people that the facts of life, as well as those of nature, living and non-living, have been explained by physics and chemistry. It has been argued that, since in matter there are inherent forces and powers adequate to account for all forms of life, the idea of a superintending, governing power is no longer needed to explain the facts familiar to us in living nature. But, so far from any such life-properties or powers having been proved to exist in any non-living matter whatever, the direct contrary remains true, at least up to this very day, and the advocates of the unity of life and non-life have been driven to take refuge in the further assertion that the tendency of thought of the time is in the direction they indicate. But tendencies are not scientific.

"Tendencies of thought, scientific prophecies, and the charming fairy tales of scientific story-tellers are for the delight of scientific childhood and may still be harmlessly enjoyed during the evolutionary period of machine development; but if we allow ourselves to be influenced by facts and reasons we must conclude that life is not a property of matter, that the living world and the non-living world are distinct, and that the former was not a natural outcome of the latter; that if all living things were destroyed the matter of their bodies and the matter of the non-living world would remain indestructible, but would also remain incapable of giving rise to new life; and that up to this day it has not been shown that fundamental religious beliefs have been shaken, destroyed or rendered untenable by the wonderful truths which have been established by the unprecedented progress of scientific discovery in every department of natural knowledge during our time."

PROFESSIONAL ATHLETICS AND EDUCATION.

SINCE our last issue another death from foot-ball has occurred, the young man having been injured October 11th. This makes five deaths in this country this season, still another being probable, the patient lying paralyzed, "with a chance of recovery." At the last Yale-Harvard "battle," "Big ACTON, of Harvard, to settle a dispute on the ground, caught BEARD on the jaw with a right-hander and brought him to earth beautifully." There was a storm of hisses, "but the occurrence was forgotten. Captain HINKEY, instead of thinking of fisticuffs, spent his time wrangling with the referee. His face was adorned with a few souvenirs of the Yale-U. P. game, when OSGOOD probably gave him enough fighting to last him for the balance of his foot-ball career." "THORNE'S nose was broken, and blood gushed from his nose and mouth, dyeing the front of his jacket a bright crimson." These selections are made from the report of the game as published by one of the best and most accurate New York newspapers.

During the past two weeks a wave of indignation and disgust has swept over the country at the travesty of athleticism and mockery of education revealed by the foot-ball disgrace. Almost all the great journals, lay and medical, have pronounced against it in the most unequivocal manner. From one point of view it is a disheartening fact that the reform of this abuse has sprung or is to spring from the healthy and sane good sense of physicians and of the people rather than from those whose duty it is to obviate and whose pride it should have been to control in advance such an abuse. From another standpoint it is gratifying to know that the people are better guides than their *ex officio* leaders. The pride of the country in its educational institutions, in their professors and governing boards has suffered at least a very severe strain, a positive loss of respect that only the most prompt, determined, and energetic action on their part can bring back again. *Puck* teaching educators their duty to education is a significant fact, and one not soon to be forgotten. It was a question, and a difficult one of solution, that of securing a block pavement about St. Paul's Cathedral. "You have only to put your heads together," said the witty Dean, "and the thing is done."

Nor can these gentlemen plead thoughtlessness. We could fill a whole issue of THE NEWS with accounts of the attempts that have been made to reform and the warnings that have been given, many of them by physicians and medical journals. We have received a large number of private letters from physicians bearing evidence of this. Among them we note one from DR. ROCHESTER, of Buffalo, who writes that it was the saying of Professor CHARLES ELIOT NORTON, of Harvard College, that base-ball is a game that would have delighted the Greeks, but that foot-ball is only fit for barbarians. Three years ago, also, DR. BURT G. WILDER gathered enough testimony to convince any cautious man of the baleful tendency. He attempted to get

subscriptions to pay off the debt of the Cornell Athletic Association on condition that what even then he termed "semi-professional college athletics" should be forbidden by the university.

Among the more recent and convincing warnings to which we would call attention is the result of the inquiry made by MR. WILLIAM ODELL, of Torquay, England, who recently addressed the question to the headquarters of some of the large public schools as to whether the boys who excel in athletics are as a rule also excellent in school-work, examinations, and the like. A similar inquiry made by a MR. CATHCART ten years ago elicited answers that were full of enthusiasm and unstinted praise of athletics. The replies to MR. ODELL'S questions are more reserved and critical. One correspondent answered that as a general and rarely broken rule, excellence in athletics and in intellectual work are not met with at the same time in the same person; another, that "the spirit of athleticism needs controlling." DR. HORNBY, of Eton, notes that "some years ago it was quite possible for a boy who had an aptitude for cricket or rowing to attain to the highest excellence, according to the standard of that day, in athletics and school-work. I doubt whether it is so now. Athletics of all kinds have become so developed and brought into a system, and, I may almost say, professional, that the time required for a very high excellence in them is, I think, a serious obstacle to a reading man or a studious boy's engaging in them with a view to athletic distinction. This is a serious evil in our day." And DR. PERCIVAL, of Rugby, says that "the great publicity given to athletics tends to give them an undue prominence in the minds of both boys and men."

THE COCHRAN CASE.

WE publish elsewhere the report of the two physicians appointed by the Government to examine into the mental condition of HENRY S. COCHRAN, who robbed the Philadelphia Mint. This report was made to the United States District Attorney, and seems to have been effectual in bringing the trial of the case to a speedy termination. COCHRAN'S lawyer made no defence of insanity, the prisoner's crime was quickly proved, and a verdict of guilty was promptly rendered by the jury, without leaving the box. It is hoped that the report will be equally effectual in silencing the unfounded assertions that have made their way into the medical as well as the lay press, that the criminal is insane. As no medico-legal contest was developed in the trial it is needless to say that we cannot present a medico-legal report, as we stated in our last issue that it was our intention to do. We desire, however, in view of the medico-legal interest excited in the case, to take some notice of its main features.

COCHRAN is sixty-seven years of age and had been an employé in the Mint for forty-three years. His duties during most or all of that time were those of a weigher, a position in which it is absolutely necessary to rely to some extent upon human honesty. He had charge of the vault in which was stored many millions of dollars' worth of gold bullion in bars. This vault, however, was sealed and had been so for some years. The old weigher took his first bar several years ago; he was enabled to secure it without disturbing the seals, because of some defective construction of the vault. There is reason to believe that he was in some financial difficulty at the time and needed money. He was, moreover, dissatisfied with the amount of his salary, which, considering his responsibility, was small. In order to realize on the bars without being detected he melted them down in a crucible in a third-story room of his residence in Darby, and sent the crude metal thus obtained back to the Mint by express, and thus received the profits of its sale. This, in brief, is the story of his systematic and long-continued stealing.

The detection of COCHRAN'S crime followed as a matter of course when the vault was opened for the purpose of coining the gold. It required no feat of expert detective work; neither was it the result of weak-mindedness in the weigher. When orders to open the vault were sent from Washington during the recent financial stringency, COCHRAN immediately began to betray uneasiness. He expostulated, and plead especially that the vault was the best storage place in the Mint, and that it would be a pity to empty it. He even visited Washington and attempted to influence the Director of the Mint, cunningly saying, however, that his visit to the capital was to look after his political safety, which he feared was jeopardized by the change of administrations. There was no evidence of dementia, but merely of a guilty conscience, in this visit. When at last detection appeared certain he secreted a further number of gold bars in a space above the vault. His object in doing this is not clear, but it is supposed that it had reference to some belief or

desperate hope of the criminal that it would divert suspicion from himself, or at least help to implicate others, and thus enable him to make terms.

In his house at Darby COCHRAN had several ingeniously constructed secret drawers and safes. One of these was made many years ago by the village carpenter for the perfectly legitimate use of storing some family silver. Another was a rudely-constructed, but inaccessible, hiding-place for a small iron safe. After his confession he revealed these places, which contained most of what was left of his pelf. A so-called secret passage-way under ground, leading from the house to the street, which was sensationally described by the newspapers, was simply a vaulted drain. It had no significance or criminal use whatever.

COCHRAN'S house, in which he lived alone, was an old-fashioned, rather large dwelling, with nothing remarkable in it but the accumulation of a lot of nearly useless and almost valueless rubbish. The only significant things in the house were a crucible and melter's tools, taken from the Mint, and a stove and some other appurtenances such as counterfeiters use. These were in a third-story room, in which was a carpenter's bench, tools, etc. These accumulations, about which much was said in the newspapers, consisted of old hats, shoes, umbrellas, and neckties in superabundance; a box of razors—one for every day in the month; and a collection of cheap books, such as are written for boys. Conspicuous among the latter were bibles and hymnals. In the work-room was a pile of iron match-safes after a pattern invented by the weigher; also a large pair of discarded scales, which he had purchased from the Mint.

Personally COCHRAN was a man of very regular habits. He never drank alcoholic liquors, used no tobacco, and contrary to what was hinted in the newspapers, lived a perfectly moral life as far as is known. He was a church-member, a generous giver, popular with children, and generally liked by his acquaintances. His health had always been good, and before his crime he had never been suspected of any mental aberration. Physically he is large and healthy, with no more marks of senility than can be found in the majority of men of his age.

As is shown by the official report of the examining physicians, COCHRAN presents none of the mental or physical signs either of paresis or of senile dementia. His memory is good, his mental reflexes active and sure, his thoughts coherent, and he has neither delusion nor hallucination. He is thoroughly aware of the moral quality of the act and of its consequences. He has none of the signs, such as defects of articulation, tremor of the facial muscles, involvement of internal or external ocular muscles, or of the optic nerve, which it was confidently predicted by some that he would be shown to have.

Upon this very plain and simple, but most deplorable, case of temptation, weakness, and crime, a theory of insanity of the most elaborate structure has been built in some quarters, with the aid of newspaper reporters and voluble physicians. We noticed this aspect sufficiently in our last issue, and publish this rather brief summary of the case merely to show that it is one of common stealing, without any medico-legal bearings of interest or importance.

EDITORIAL COMMENTS.

A Remarkable Remedy for Remarkable Diseases.—We cannot forbear allusion in the most lenient and amused spirit to an interesting specimen of *English as she are translated into* that comes to our notice in the shape of a circular descriptive of a French pharmaceutic preparation, "a coal-tar product" of marvellous efficacy for some forms of disease that may be new to our readers. There are four octavo pages of recommendations; we can only cite a few—the syntax and capitalization being those of the circular:

"In the opinion of the Dr. Bouchut, the best topic into the BUFFY ANGINA consists to employ douches into the pharynx. Since ten years I do not use other means at the hospital; the patient child opens his mouth, inclining himself, with a basin under his chin, and the liquid, injected with strength, go out, without never to penetrate by the windpipe." We suppose the "gastric tube" of the French child must be absolutely without twist or turn from beginning to end. Dr. Dupont also recommends the preparation especially "for to be UNDERSKELTER OF THE INFECTION," and Dr. Lorrain is especially pleased with it "for the disinfection of the woman confined in the preventive against the consecutive accidents at the deliveries." Dr. Bazin finds it "an excellent mean of fortifying the scalp." For this purpose he "had prescribed ordinary some lotions with the acid of one little imbibed sponge extended with 3 at 6 parts of tepid water or water at the bran." "Into the ulcerous affections of the gums the emulsion is possessing one special efficacity for CONSOLIDATING THE BARED TEETH, destroying the leavens or animalcula what often unwrap itself in these organs," etc. For "the TOILED OF THE NURSLINGS," for "THE VETERINARY MEDICINE," "INTO THE LEUCORRHEA (wite flowers)," for "CRUSTS AT THE HEAD," etc., the good "Emulsion at the 30th, 40th, and 50th," are alike efficacious, employed "into the eyes, the eyelids, the buccal and vulvary gangrene, the fluent hemorrhoids," etc. This caution is wisely added: "The seat and the nature of the lesions as so as the most or less great captiousness of the organs de-

mand in many circumstances the coaltar be added with unmingled water." "The EMULSION-MÈRE at the 5th shall be the starting post for the attenuation."

This matter of translating from one's native language into another without the faintest knowledge, and solely by the aid of a dictionary, has proved a source of unfailing amusement to many generations. If one knows French well one can trace every twist of the poor translator's mind. For example, one would be puzzled to understand the notices in our circular that "the Principal Stock Fort the Great Britain, is at etc., and Fort the United States," if one didn't remember that the French word *magasin* (warehouse or storage-depot) may have an English synonym in the dictionaries, *Fort* or *Fortress*.

The Treatment of Enteric Fever.—Apropos of the expression of regret, in the review (THE NEWS, November 18th, p. 586) of Dr. Yeo's *Clinical Therapeutics*, that a discussion of the value of cold baths in the treatment of enteric fever was not fully entered into, Dr. J. M. Deam, of New Carlisle, O., calls our attention to a method of treatment employed by him, and described in the September number of the *Columbus Medical Journal*, p. 105. The mode of procedure followed is to give all patients throughout the entire illness podophyllin in doses of quarter of a grain as frequently as may be necessary to change the color of the stools—first to green and afterward to the normal color observed in health. In addition the official solution of potassium arsenite is administered hourly in doses of half a drop. Further, hot alkaline sponge-baths are given twice a day, or oftener, the number being regulated by the effect upon the temperature and the nervous system. If colicky pains be present morphin is administered. "The diet is practically unrestricted, with the exception that milk is absolutely forbidden. The patient is never asked to take nourishment in any form, nor ever refused when he asks for it." About twenty-five cases have been submitted to the treatment outlined. The appetite was found to return in from six to eight days; the fever to be gone in from eight to ten days, and the patient to be up and about in from ten to twelve days. In his letter Dr. Deam expresses a readiness "at any time to demonstrate the truth of" his "theory in any hospital under the supervision of competent diagnosticians, so that no cavil may arise regarding the nature of the disease, as also its course and duration under" his "treatment." However great a degree of skepticism one may feel in a matter of this kind, the privilege is not given to condemn without experience that which another claims to have value.

Coroner Reform.—The propriety, if not the necessity, of the coroner being a man with a medical training, as well as with a judicial mind, received a rather ludicrous demonstration the other day in the city of Philadelphia. In a case in which the cause of death was uncertain, the attending physician had declined to issue a certificate; but the coroner's jury, no doubt upon and with the authority of the learned coroner, brought in a verdict of death from heart-disease complicated with senility, although the attending physician had stated in reply to an inquiry that during life no disease of the heart was recognizable. In the same city and in the office of the same coroner post-mortem examinations have been made, and the reports based upon an inquiry into the history of the case, perhaps also upon the opinion of the attending physician and upon a superficial view of the body, incision and further investigation not being deemed necessary by an official who knows practically little or nothing of anatomy and pathology, but who seems able and capable of assuming arbitrarily a good deal of authority. The remedy for a system so defective lies in making the office of coroner a non-partisan one, and filling it with a medical man.

The Richardson Memorial of the Medical Department of Tulane University, at New Orleans, is a gratifying evidence of medical progress. It was dedicated November 4th with appropriate services. It is a commodious and imposing structure of four stories, containing in all seventy-two rooms, located on Canal Street, between Villere and Robertson Streets. The main lecture hall is fifty-five feet square and twenty-eight feet high, seating four hundred students in opera chairs. The building is the gift of Mrs. Ida A. Slocomb, in memory of her husband, Dr. T. G. Richardson, who devoted thirty-one years of his life as professor in the medical faculty of the school. The planning and erection of the building has been under the supervision of Professor Souchon. Judging from the reports the building is the outcome of the most diligent thought and study as to the construction of medical college buildings. May the school labor to send forth her graduates with an educational outfitting worthy of the unselfishness of the donor and of the excellent mechanism she has provided.

Medical Illustrations and Obscene Literature.—We are not at all certain that there have not been in the past such errors in illustrating medical literature, or in advertising medical appliances and devices, such as posture-tables, that the mistakes have not been far more and worse than mere faults of taste. But, of course, we can have nothing but condemnation for any interpretation of the law, or for any legal proceedings, that would forbid or prevent the free passage through the mails of whatever may be justly called medical literature. We learn that an instance designed as "a test-case" has been submitted to Commissioner Fairchild for his decision. A special example might possibly be forbidden the service of the United States mails, but it is doubtful if any general rule could be made that would not be opposed to medical progress and unjust to the profession.

Vegetarianism and Physical Endurance.—In a recent pedestrian contest between Berlin and Vienna two vegetarians came out far ahead of their carnivorous competitors. This is an old lesson newly taught, but the modern man thinks he must have large quantities of animal flesh three times a day "to sustain his strength." It would seem that in this respect civilization is reverting to the habits and characteristics of the carnivora instead of progressing out of it. We suppose the scientists would say that if it were not for cooking we would have to re-develop our canine teeth, so called, into the olden *de facto* type.

"***The Misuse of Drugs in Modern Practice***" is the title of an instructive paper by Dr. John T. G. Nichols, of Cam-

bridge, Mass. (the annual discourse delivered in Boston before the Massachusetts Medical Society, June 14, 1893), which should be read, pondered over, and inwardly digested by the general physician.

CORRESPONDENCE.

THE TESTIMONY OF PHYSICIANS IN COURTS.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of July 29, 1893, you editorially speak of a new law recently passed in New York, which you regard as remarkably liberal toward that part of the medical profession which reaps benefit by its provisions. Your editorial is headed, "A New Procedure in Medical Testimony," on page 132 of THE NEWS.

I was struck with the evident surprise your language indicated at such unexpected liberality toward physicians by law-makers, even in the great and progressive State of New York.

I wish to say that Tennessee has for years had a statute of similar, but more universally applicable character, which shows to the profession eminent fairness in the matter of medical testimony other than in criminal cases. In this State a physician cannot be *compelled* to attend court *in person* except in criminal cases—though most of the doctors do not know this, and go when summoned. But the *law* permits—and I have taken its privilege for years—that a doctor may indorse upon a subpena that "he is a practising physician, and claims exemption from attendance at court in this case, and that his deposition shall be taken regularly out of court." This exempts his attendance, and puts the *attorneys* to the inconvenience *instead of the physicians*, placing upon plaintiffs the burden of getting up their evidence before the case is called, or hazarding the absence of the medical testimony, and a postponement of the case—as has frequently happened by reason of my own insistence of my rights under the law.

Now the workings of this law favor materially the physician, especially in small country towns where the necessities of general practice exact prompt and proper attendance to their patients by absence of competition, and by exempting them from *court* attendance (with its often exasperating delay and time-consuming by the dragging along of court proceedings) have proved practical and just. Prior to my own locating in this city I was a witness in every court (thrice each year) that convened in my town for a number of years. Many of the cases were frivolous damage-claims, without hope of remuneration for the witnesses whatever. And when, at length, I ascertained my professional exemption, I found solace by fortifying myself behind its provisions against the arbitrary demands of civil suits, which possessed neither interest nor profit for me in any event, but furnished great annoyance and tax upon time, income, and patience.

I find that a few attorneys "raise Cain" because I invariably insist upon my rights under this law, and point me to numerous doctors who attend readily on summons, most of them through ignorance of their exemption, others by reason of choice to air their attainments in public for the indirect advertising thereby secured. And I even find the legal brethren largely unaware themselves that physicians enjoy any exemptions in this State, except from jury duty and road-working, all of which are ours here.

Another comfort we (or at least I) reap from this statute is the opportunity for calm statement of facts in cases within our knowledge, generally at our own offices and convenience, writing the same leisurely ourselves in reply to written interrogatories. I am not, thus, subjected to annoying public cross-examination with a view of entangling me in my evidence through legal cunning, nor is the witness tortured by legal posing "for the galleries," before the jury, at his expense. It renders medical evidence dignified, and secures for it reasonable importance and respect before the court. It likewise relieves the too frequent appearance of a witness "rushing" forward—as grows common of late—to make a strong case for *his own patient* in these fashionable suits for personal damages, thus placing the profession in an attitude of fomenting and favoring the growing litigation along this line. Of course, this naturally breeds a leaning by doctors toward impulsively pressing or defending personal interests of others simply because of their patronage—in my own opinion a pernicious influence, because the doctor should only take interest in these matters through the plain equities of the various cases involved wherein he happens to (professionally) become a casual witness; and often his evidence must, if fair and unbiased, be diametrically antagonistic to the interests of his own patron. Such has at least been my own experience more than once; yet the simple fact that I had attended the plaintiff was taken as undoubted ground that my testimony would strengthen his case, even without so much as interrogating me in advance of filing the suit. Professional antagonisms and animosities spring from a like status.

When the witness calmly insists that he can *only* be used as a witness by deposition out of court, it shows on its face that *he is not inclined* to foment trivial damage-litigation, and whichever way his evidence goes, and when formally taken, it carries greater weight, and bears the appearance of unprejudiced testimony. And I find that the trouble it entails saves me from being utilized at all in trivial cases, or those greater ones in which my evidence is not of essential importance, the attorneys preferring to establish the facts sought by other witnesses, or even to forego such claims as my evidence might otherwise project into the case. Thus I am afforded freedom to a large degree from this tax on my time, and thereby enjoy enlarged opportunities for *personal* affairs as against arbitrary service hitherto at behest of irresponsible litigants often.

Of course, in criminal cases no exemption is allowed, nor ought to be, the doctor then standing to the case as an unprejudiced witness, just as I hold he should do in cases of every character—and largely conduced by our privilege here in civil actions, as already set forth, according to *my* idea of effects.

Very truly yours,

A PHYSICIAN OF TENNESSEE.

Kaposi and Neumann, after twenty-seven and thirty-two years of service respectively in the University of Vienna, have been made ordinary professors of dermatology.

NEWS ITEMS.

Report on the Mental Condition of Henry S. Cochran.—(A copy of the original as sent to the District Attorney.)

To ELLERY P. INGHAM, Esq.,
United States Attorney for Eastern District of Penna.

SIR: Agreeably to your request of September 30th last, the undersigned visited Henry S. Cochran in Moyamensing Prison, October 30th ultimo, and November 8th instant, between the hours of 11 A. M. and 12 M., for the purpose of making an examination into his mental condition, and now submit the following report:

The examination was conducted by propounding questions calculated to draw from the defendant a connected history of his life; of his business relations or occupations; of his domestic and social concerns. From the answers that might be elicited, we expected to form an opinion of the defendant's mental coherence; whether the answers were responsive; whether the memory was good or poor; whether the mental reflexes were active; also, whether he might exhibit any delusions, delusive ideas, or disorders of the senses, such as belong to, or are symptoms of, active insanity; or, that failure of the mental powers which sometimes is an accompaniment of the decay of old age.

On the occasion of both interviews we found the defendant willing to reply to questions freely, and did not hear or observe anything that led us to believe or suspect that he prevaricated or attempted to feign insanity.

We also made such physical examinations as possibly might have a bearing upon the question of insanity.

We found that answers to questions made by the defendant were responsive; without any exhibition of incoherence; his memory of events was reasonably exact and connected; his conversation was rational; and we could not infer from his life-history, as thus furnished, that at any time had there been any such departure from his normal or usual mental state as would lead to an opinion that an attack of insanity had occurred. Neither could we discover from our examination, the manner of the defendant, or his dress, the existence of any delusion, or hallucination of the senses.

The defendant stated he had been properly trained in his youth as to his moral duties and obligations; knew the difference between right and wrong; understood the nature of the charge against him, the reason of his present confinement, and that he was awaiting trial.

An examination of the eyes did not disclose any inequalities of the pupils. The pupils responded equally to the influence of light. The face was somewhat shrunken and the facial lines deep; the face had a pale hue; the tongue was pale and flabby, but both tongue and face were free from tremor. From the defendant's statement, and from the loose appearance of the clothing, assuming that it had at one time fitted him properly, there had been a marked loss of weight, amounting probably to fifty pounds. The pulse was normal in frequency, the artery at the wrist furnishing the sensation that characterizes the degeneration of arterial vessels in advanced life. The action of the heart was below the normal force of strength. No defect of the speech or articulation was observed.

An examination of the urine failed to disclose any marked abnormality; there was no appearance of albumin, sugar, or sediment, and the specific gravity was 1028.

The impression left on our minds, while not discovering evidences of organic disease, was that the general health was below the normal standard such as might appear at the age of the defendant, and might be induced partly by changed circumstances and environments.

As conclusions, we are of the opinion,

1. That the defendant, Henry S. Cochran, is not insane; and,

2. That he has a knowledge of right and wrong, of the nature of the charge against him, and the consequences of his acts.

Signed, JOHN B. CHAPIN, M.D.
JAS. HENDRIE LLOYD, M.D.

DATED PHILADELPHIA, PA., THE 14TH DAY OF NOVEMBER, 1893.

The Samuel D. Gross Prize.—The Quinquennial Prize of One Thousand Dollars under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1895.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut St., Philadelphia, before January 1, 1895.

Each essay must be distinguished by a motto, and accompanied by a sealed envelop bearing the same motto, and containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

To Succeed Charcot.—M. Brissaud has been delegated to take charge of the service of the late Professor Charcot at the Salpêtrière for a year, until a permanent successor has been appointed to the Chair of Diseases of the Nervous System. M. Potain has been appointed to fill the vacancy in the Medical Section of the Academy of Sciences.

A New Physiologic Institute at Moscow was recently opened. The building is said to have cost $60,000, and the furnishing $5000. The institute is said to be the best fitted of its kind in Europe.

The International Medical Congress, which was postponed from September 24th, on account of the prevalence of cholera in Italy, will be held at Rome from March 29 to April 5, 1894.

TRY TOILET VINOLIA SOAP.

THE A. B. C. OF THE CHEMISTRY OF SOAP.

THE OTTO OF ROSE IN TOILET VINOLIA SOAP COSTS OVER 2 CENTS A DROP.

What is a Soap?

A soap is a sait formed by the chemical combination of an alkali and fatty acid.

What are the alkalies?

Soda, potash, and ammonia.

What is a fatty acid?

That which in combination with glycerine constitutes an oil; e. g., oleic acid and glycerine make olive oil; stearic acid and glycerine, lard; lauric acid and glycerine, cocoanut oil, etc., etc.

Does it make any difference what alkalies are used?

Yes. Hard soap is a soda soap, soft soap is a potash soap.

Does it make any difference what fatty acids are used?

Yes. For example, soap made with stearic acid dissolves very slowly, while that made with lauric acid dissolves faster and lathers freely.

The soap basis in "Vinolia" Soap (before it is subjected to our special "toilet refining processes") costs probably double that of other foreign soaps which, of course, are now out of date. This Soap was awarded the medal of the Sanitary Institute, the highest award in the world, and never given to any transparent, etc., soaps.

"Vinolia" Soap—Premier, 15 cts., Floral, 20 cts., Medical, 25 cts., Toilet (Otto), 35 cts., and Vestal, 85 cts. per tablet.

SOLD BY LEADING DRUGGISTS. IF YOURS DOES NOT KEEP IT, WRITE DIRECT.

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Treatment with Buffalo Lithia Water

By eminent physicians as follows

DR. HUNTER McGUIRE, says:—"In Uric Acid Gravel, and indeed, in diseases generally dependent upon an Uric Acid Diathesis, Buffalo Lithia Water Spring, No. 2, is a remedy of extraordinary potency. I have prescribed it in cases of Rheumatic Gout, which had resisted the ordinary remedies, with wonderfully good results. I have used it also in my own case, being a great sufferer from this malady, and have derived more benefit from it than from any other remedy."

DR. J. T. LeBLANCHARD, Professor Montreal Clinic, SM., SN., V. U. "I have used Buffalo Lithia Water in the most obstinate cases of Chronic Inflammation of the Bladder, in Stone of the Bladder, in Uric Acid Gravel, with the most efficacious results."

DR. WM. B. TOWLES, Professor of Anatomy and Materia Medica in the Medical Department of the University of Virginia. "Buffalo Lithia Water Springs, No. 2, has proved far more efficacious in many diseased conditions than any of the simple Alkaline waters. I feel no hesitancy whatever in saying that in Gout, Rheumatic Gout, Rheumatism, Stone in the Bladder, and in all diseases of Uric Acid Diathesis, I know of no remedy at all comparable to it. Its effects are marked in causing a disappearance of Albumen from the Urine."

DR. HARVEY L. BYRD, Of Baltimore, President and Professor of Obstetrics and Diseases of Women and Children in the Baltimore Medical College, formerly Professor of Practical Medicine, etc. "I have witnessed the best results from the action of the Buffalo Lithia Water, Spring No. 2, in Chronic Gout, Rheumatic Gout, Rheumatism, Gravel and Stone in the Bladder, and I do not hesitate to express the opinion that in all deseases depending upon or having their origin in Uric Acid Diathesis, it is unsurpassed, if indeed it is equaled, by any water thus far known to the Profession."

Calculi Dissolved

BY THE

Buffalo Lithia Water

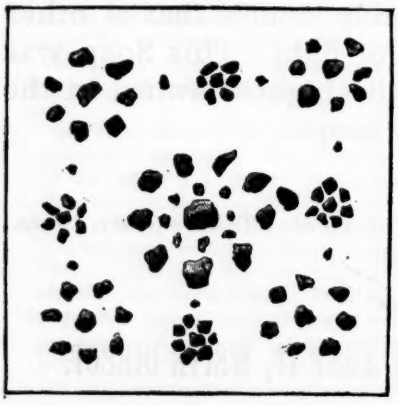

Illustration of the Calculi referred to by Dr. Claiborne. The engraving was made from a photograph and represents the exact shape of the Calculi; they are four times size of above.

DR. JOHN HERBERT CLAIBORNE, of Petersburg, Va., *ex-President and Honorary Fellow Medical Society of Virginia, in a letter, dated September 3, 1892, to Dr. E. C. Laird, Resident Physician at the Buffalo Lithia Springs,* says:—"I send by this mail a box of Calculi, passed at various times within the last year by Hon. T. J. Jarratt, our former Mayor, whilst drinking the Buffalo Lithia Water. They give him but little pain now when passing. I have never critically examined the broken Calculi, passed in such quantities from Mr. Jarratt's bladder, but am under the impression that the most of them are magnesian phosphates. There were specimens, however, which presented the appearance of oxylates, and some, I remember, impressed me specially as being uric acid. I do not pretend to account for the mode of their solution by the Buffalo Lithia Water. There is nothing in its analysis which would warrant such results: but the results are there, and seeing is believing. I can only suppose that **in Nature's alembic there has been some subtle solvent evolved, too subtle to be caught by our coarse re-agents, which make this wonderful disintegration.** 'There are many things in heaven and earth not dreamt of in our philosophy,' and his is a short creed who only believes what he can prove or explain."

Water in cases of one dozen half-gallon bottles $5.00 f. o. b. here.
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THOS. F. GOODE, Proprietor
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who, in addition to the remedies herewith described, prepare SULFONAL-BAYER, SALOPHEN, LOSOPHAN *and* ARISTOL.

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AS A COMPLETE SUBSTITUTE for IODOFORM no remedy is comparable to Europhen. It is the best known cicatrisant for open wounds, and catarrhal or ulcerative lesions, whether or not of a specific character; and it has a special value in cavital lesions.

EUROPHEN has five times more covering power than iodoform and adheres to denuded surfaces. It is supplied in ounces, pure, or mixed in equal proportions with Aristol.

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THIS WELL KNOWN REMEDY has justified in the most exceptional manner the opinions of medical men touching its value in modern therapeutics. Phenacetine is indicated in all acute, inflammatory, febrile conditions, and all forms of pain. It is the safest, while the most active, of the antipyretics and analgesics.

PHENACETINE is supplied in *ounces, tablets* and *pills*; also in various combinations with Salophen, Sulfonal, etc.

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FOR LITHIASIS, acute and chronic gout, uric acid dyscrasia, and the gouty diathesis generally, no remedy has succeeded so well as PIPERAZINE. In Renal Colic and Urinary Hemorrhage, also, it is especially efficacious. PIPERAZINE-BAYER is made by a new process whereby its cost is greatly reduced.

PIPERAZINE-BAYER is supplied in *half ounces, ounces* and *tablets*. In painful conditions it may be combined with Phenacetine.

Trional

TRIONAL is a nerve sedative and hypnotic which has given very satisfactory results in cases not amenable to treatment by other drugs. It is peculiarly valuable in cases of slight psychical excitement accompanied by obstinate insomnia. It acts promptly and is useful in many forms of delirium.

TRIONAL is administered in doses of 15 to 30 grains. Where pain is present Trional may be given conjointly with Phenacetine. *Supplied in ounces.*

Physicians who wish to have the published testimony concerning the therapeutic action of these preparations, or information as to their chemistry or physiological action, should address

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And the Vitalizing Constituent—Phosphorus; the whole combined in the form of a Syrup with a **Slightly Alkaline Reaction.**

It Differs in its Effects from all Analogous Preparations; and it possesses the important properties of being pleasant to the taste, easily borne by the stomach, and harmless under prolonged use.

It has Gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy, and removes depression and melancholy; *hence, the preparation is of great value in the treatment of mental and nervous affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of the secretions, its use is indicated in a wide range of diseases.

NOTICE—CAUTION.

The success of Fellows' Syrup of Hypophosphites has tempted certain persons to offer Imitations of it for sale. Mr. Fellows, who has examined samples of several of these, ***finds that no two of them are identical,*** and that all of them differ from the original in composition, in freedom from acid reaction, in susceptibility to the effects of oxygen when exposed to light or heat, ***in the property of retaining the strychnine in solution,*** and in the medicinal effects.

As these cheap and inefficient substitutes are frequently dispensed instead of the genuine preparation, physicians are earnestly requested, when prescribing the Syrup, to write, "Syr. Hypophos. ***Fellows.***"

As a further precaution, it is advisable that the Syrup should be ordered in the original bottles; the distinguishing marks which the bottles (and wrappers surrounding them) bear, can then be examined, and the genuineness—or otherwise—of the contents thereby proved.

Medical Letters may be addressed to:

Mr. FELLOWS, 48 Vesey Street, New York.